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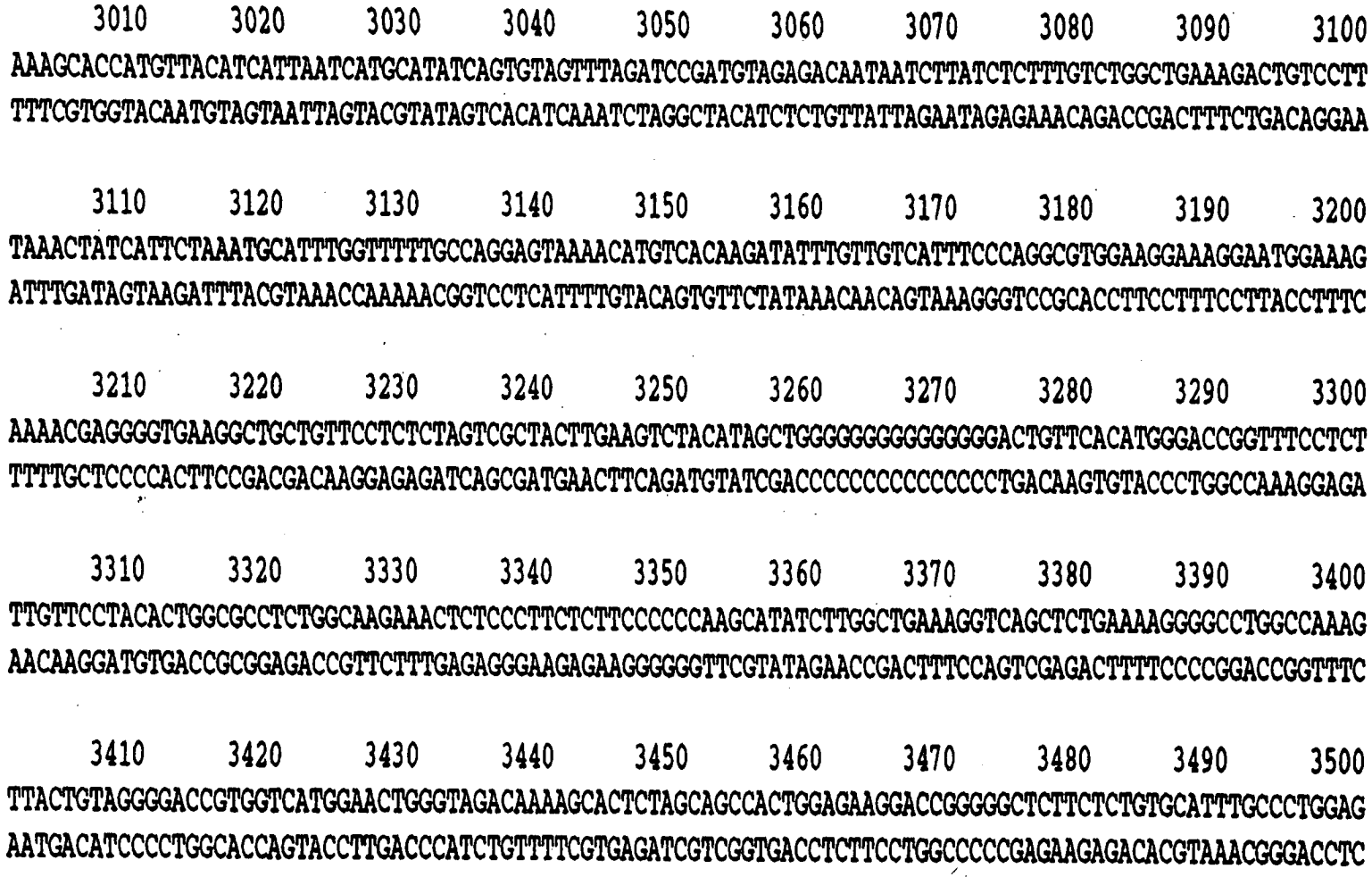

FIG. 5G

```
      3510       3520       3530       3540       3550       3560       3570       3580       3590       3600
CCCTGACCACCGCCAGCTCCCTGCATCTCCTTGCTATGGGTTTTCTGGACCGAGCCAGGCAGGAGTTCACAACCGAAATGTCTTCTAGGGCTAATCAGGT
GGGACTGGTGGCGGTCGAGGGACGTAGAGGAACGATACCCAAAAGACCTGGCTCGGTCCGTCCTCAAGTGTTGGCTTTACAGAAGATCCCGATTAGTCCA

      3610       3620       3630       3640       3650       3660       3670       3680       3690       3700
AACTTCGGACGATTTAAAGTTGCCAGATGGACGAGAAAACAGTAGAGGCGTTGGCAACCTGGATAAGCGCCTATCTTCTAATTAAAACATTCAGACGGGG
TTGAAGCCTGCTAAATTTCAACGGTCTACCTGCTCTTTTGTCATCTCCGCAACCGTTGGACCTATTCGCGGATAGAAGATTAATTTTGTAAGTCTGCCCC

      3710       3720       3730       3740       3750       3760       3770       3780       3790       3800
CGGGGGATG-CGGTGGCCAAAGCACCATAAAACAAAACTTCCAAGTACTGACCAACTCACTGCAAGTTTGTGCCCCGAGTACATCTAGGTTCAGGGGTCT
GCCCCCTAC-GCCACCGGTTTCGTGGTATTTTGTTTTGAAGGTTCATGACTGGTTGAGTGACGTTCAAACACGGGGCTCATGTAGATCCAAGTCCCCAGA

      3810       3820       3830       3840       3850       3860       3870       3880       3890       3900
TGTCTTCATGCTCCCAACTGCGGGCGGATTTTTGGTCCCTTGGGACTTTCAGTGCAGCGGCGAAGAGAGTTCTGCACTTGCAGGCTCCTAATGAGGGCGC
ACAGAAGTACGAGGGTTGACGCCCGCCTAAAAACCAGGGAACCCTGAAAGTCACGTCGCCGCTTCTCTCAAGACGTGAACGTCCGAGGATTACTCCCGCG

      3910       3920       3930       3940       3950       3960       3970       3980       3990       4000
AGTGGGCCTCGTGTTTCTGGTGATGCTTCCCAGGTTGCTGGGGGCAGCAAGTGTCTCAGAGCCCATTACTGGCTACATTTTACTTCCACCAGAAACCGAG
TCACCCGGAGCACAAAGACCACTACGAAGGGTCCAACGACCCCCGTCGTTCACAGAGTCTCGGGTAATGACCGATGTAAAATGAAGGTGGTCTTTGGCTC
```

FIG. 5H

2510 2520 2530 2540 2550 2560 2570 2580 2590 2600
ATCGTCCCTCCCTCTACCCAGATCTGACAGCCCTCCTTGGCTCTTTTGCTGAGGTTTGTTTGAGTTTGTTTTACTCTCTGCAAGAGAAGTTTCCTTAAAC
TAGCAGGGAGGGAGATGGGTCTAGACTGTCGGGAGGAACCGAGAAAACGACTCCAAACAAACTCAAACAAAATGAGAGACGTTCTCTTCAAAGGAATTTG

2610 2620 2630 2640 2650 2660 2670 2680 2690 2700
ATTCTACCCTGTTCACAAGTAAATACACCTCTTAGCTAAGAGGCCACACACCCAGGGGAACACCGATAAAAAGAACAAGCCAGAACCTTCAGAACGCTGT
TAAGATGGGACAAGTGTTCATTTATGTGGAGAATCGATTCTCCGGTGTGTGGGTCCCCTTGTGGCTATTTTTCTTGTTCGGTCTTGGAAGTCTTGCGACA

2710 2720 2730 2740 2750 2760 2770 2780 2790 2800
CGATAGGTACACCAAGCAGCCTTCATACGGAGTTTTCATTCGTGAGGAGCTGAATATACAACAAAGCTAAATGTGAGCAGACCAGGCATGCCTCTGCTAA
GCTATCCATGTGGTTCGTCGGAAGTATGCCTCAAAAGTAAGCACTCCTCGACTTATATGTTGTTTCGATTTACACTCGTCTGGTCCGTACGGAGACGATT

2810 2820 2830 2840 2850 2860 2870 2880 2890 2900
ATGAGGATGCCCACACCAAACATGCCCAAGATCTTCAAGTATAATTTTATTATATAGATTCGCTATGTGTTGACATGTTTTTATAGTGAACCTGGATTTT
TACTCCTACGGGTGTGGTTTGTACGGGTTCTAGAAGTTCATATTAAAATAATATATCTAAGCGATACACAACTGTACAAAAATATCACTTGGACCTAAAA

2910 2920 2930 2940 2950 2960 2970 2980 2990 3000
ACAAACCCTCCTGGTTTGCCACCTGCTTCTGGCACCATACTTGAGGCTTAGGCACGTGATAAAGGAGCATGCCTGTTTCCCCCCTTATTTTTTTTAAAGA
TGTTTGGGAGGACCAAACGGTGGACGAAGACCGTGGTATGAACTCCGAATCCGTGCACTATTTCCTCGTACGGACAAAGGGGGGAATAAAAAAAATTTCT

FIG. 5F

2010 2020 2030 2040 2050 2060 2070 2080 2090 2100

CTATCTCTCCTTCCCCAGTGCTGGGATAACAAGGTTGGCACCACATGAGCCTTTTAAAATGTGAGTTTGGAAGCTCAAACGCAGGTTTTCATGCTTGCAC

GATAGAGAGGAAGGGGTCACGACCCTATTGTTCCAACCGTGGTGTACTCGGAAAATTTTACACTCAAACCTTCGAGTTTGCGTCCAAAAGTACGAACGTG

2110 2120 2130 2140 2150 2160 2170 2180 2190 2200

TGAAACTTCACAAGCTGAACCGTCTCCCTCTCCTTCCCTCTCTTTTTTCCTTTTCTTCTTCCTTTTTAAAACACATCTTGTCTTTAAAAAAAAAAAAGG

ACTTTGAAGTGTTCGACTTGGCAGAGGGAGAGGAAGGGAGAGAAAAAAGGAAAAGAAGAAGGAAAAATTTTGTGTAGAACAGAAATTTTTTTTTTTTCC

2210 2220 2230 2240 2250 2260 2270 2280 2290 2300

CCCAAAACAAGTGTAAAGTATTTCCCTATGTGTGTGGAGGGAGGGAGTATAGGAGGCTGATTTCACTGAGATCCTGTTAAATTTGGGTGCCATAGCCAAT

GGGTTTTGTTCACATTTCATAAAGGGATACACACACCTCCCTCCCTCATATCCTCCGACTAAAGTGACTCTAGGACAATTTAAACCCACGGTATCGGTTA

2310 2320 2330 2340 2350 2360 2370 2380 2390 2400

CAAAGACGCATCGTTTCCTCTAAGAATTCTAAATGGGGCGATTACCACGGGCCTGCAGGTTCTGGTTTGTATTAGAGGAGACACTGTCTTCTTAAGTAAA

GTTTCTGCGTAGCAAAGGAGATTCTTAAGATTTACCCCGCTAATGGTGCCCGGACGTCCAAGACCAAACATAATCTCCTCTGTGACAGAAGAATTCATTT

2410 2420 2430 2440 2450 2460 2470 2480 2490 2500

ACATAGAAGGGGAAGTGTCCAGAATTGTAAATAAGGCTTCGAGAGAAGCCTTGTCTGGCCACCGGGATGGAGAAGACCTACCTTCGCCTATCCAGGATCC

TGTATCTTCCCCTTCACAGGTCTTAACATTTATTCCGAAGCTCTCTTCGGAACAGACCGGTGGCCCTACCTCTTCTGGATGGAAGCGGATAGGTCCTAGG

FIG. 5E

4010 4020 4030 4040 4050 4060 4070 4080 4090 4100
CTGCGTCCAGATTTGCTCTCAGATGCGACTTGCCGCCCGGCACAGTTCCGGGGTAGTGGGGGAGTGGGCGTGGGAAACCGGGAAACCCAAACCTGGTATC
GACGCAGGTCTAAACGAGAGTCTACGCTGAACGGCGGGCCGTGTCAAGGCCCCATCACCCCCTCACCCGCACCCTTTGGCCCTTTGGGTTTGGACCATAG

4110 4120 4130 4140 4150 4160 4170 4180 4190 4200
CAGTGGGGGGCGTGGCCGGACGCAGGGAGTCCCCACCCCTCCCGGTAATGACCCCGCCCCCATTCGCTAGTGTGTAGCCGGCGCTCTCTTTCTGCCCTGA
GTCACCCCCCGCACCGGCCTGCGTCCCTCAGGGGTGGGGAGGGCCATTACTGGGGCGGGGGTAAGCGATCACACATCGGCCGCGAGAGAAAGACGGGACT

4210 4220 4230 4240 4250 4260 4270 4280 4290 4300
GTCCTCAGGACCCCAAGAGAGTAAGCTGTGTTTCCTTAGATCGCGCGGACCGCTACCCGGCAGGACTGAAAGCCCAGACTGTGTCCCGCAGCCGGGATAA
CAGGAGTCCTGGGGTTCTCTCATTCGACACAAAGGAATCTAGCGCGCCTGGCGATGGGCCGTCCTGACTTTCGGGTCTGACACAGGGCGTCGGCCCTATT

4310 4320 4330 4340 4350 4360 4370 4380 4390 4400
CCTGGCTGACCCGATTCCGCGGACACCGCTGCAGCCGCGGCTGGAGCCAGGGCGCCGGTGCCCCGCGCTCTCCCCGGTCTTGCGCTGCGGGGGCGCATAC
GGACCGACTGGGCTAAGGCGCCTGTGGCGACGTCGGCGCCGACCTCGGTCCCGCGGCCACGGGGCGCGAGAGGGGCCAGAACGCGACGCCCCCGCGTATG

4410 4420 4430 4440 4450 4460 4470 4480
CGCCTCTGTGACTTCTTTGCGGGCCAGGGACGGAGAAGGAGTCTGTGCCTGAGAACTGGGCTCTGTGCCCAGCGCGAGGTGCAGATG
GCGGAGACACTGAAGAAACGCCCGGTCCCTGCCTCTTCCTCAGACACGGACTCTTGACCCGAGACACGGGTCGCGCTCCACGTCTAC

FIG. 5I

VEGF	VEGFR2	Tie2
Screening primers	**Screening primers**	**Screening primers**
Primers: VF1-VR1A Product size: 0.69Kb	Primers: KF1-KR1 Product size: 0.45Kb	Primers: TF3-TR1 Product size: 0.45Kb
PCR program	**PCR program**	**PCR program**
Hot start	Hot start	Hot start
94°C 40 sec 65°C 1 min 30 sec 72°C 1 min 30 sec	94°C 40 sec 58°C 1 min 30 sec 72°C 1 min 30 sec	94°C 40 sec 58°C 1 min 30 sec 72°C 1 min 30 sec
40 cycles	40 cycles	40 cycles
Confirmation primers	**Confirmation primers**	**Confirmation primers**
Primers: VF2-VR2 Product size: 0.98Kb	Primers: KF2-KR2 Product size: 0.58Kb	Primers: TF2-TR1 Product size: 0.47Kb
PCR program	**PCR program**	**PCR program**
Hot start	Hot start	Hot start
94°C 40 sec 65°C 1 min 30 sec 72°C 1 min 30 sec	94°C 40 sec 65°C 1 min 30 sec 72°C 1 min 30 sec	94°C 40 sec 58°C 1 min 30 sec 72°C 1 min 30 sec
40 cycles	40 cycles	40 cycles

FIG. 6

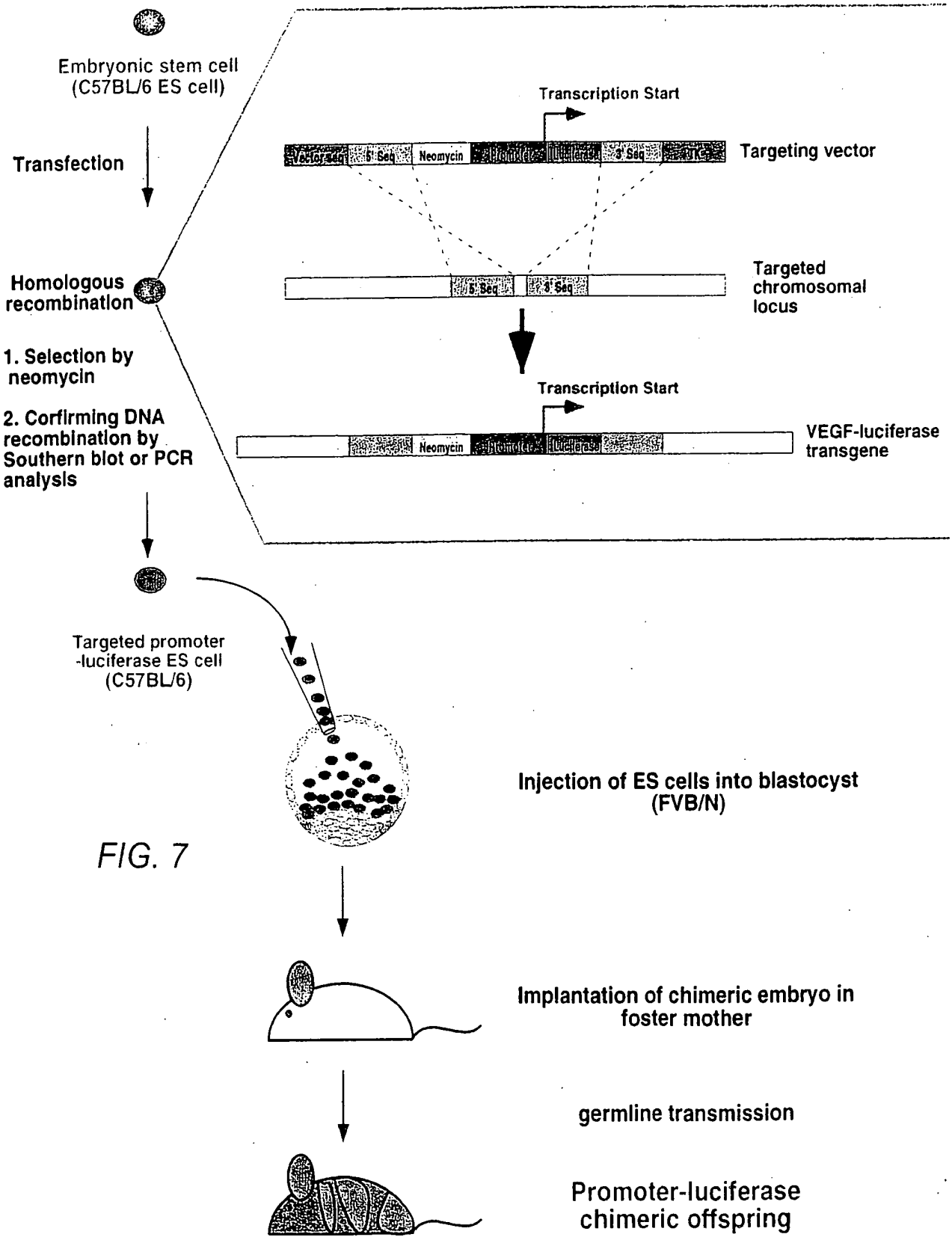

FIG. 7

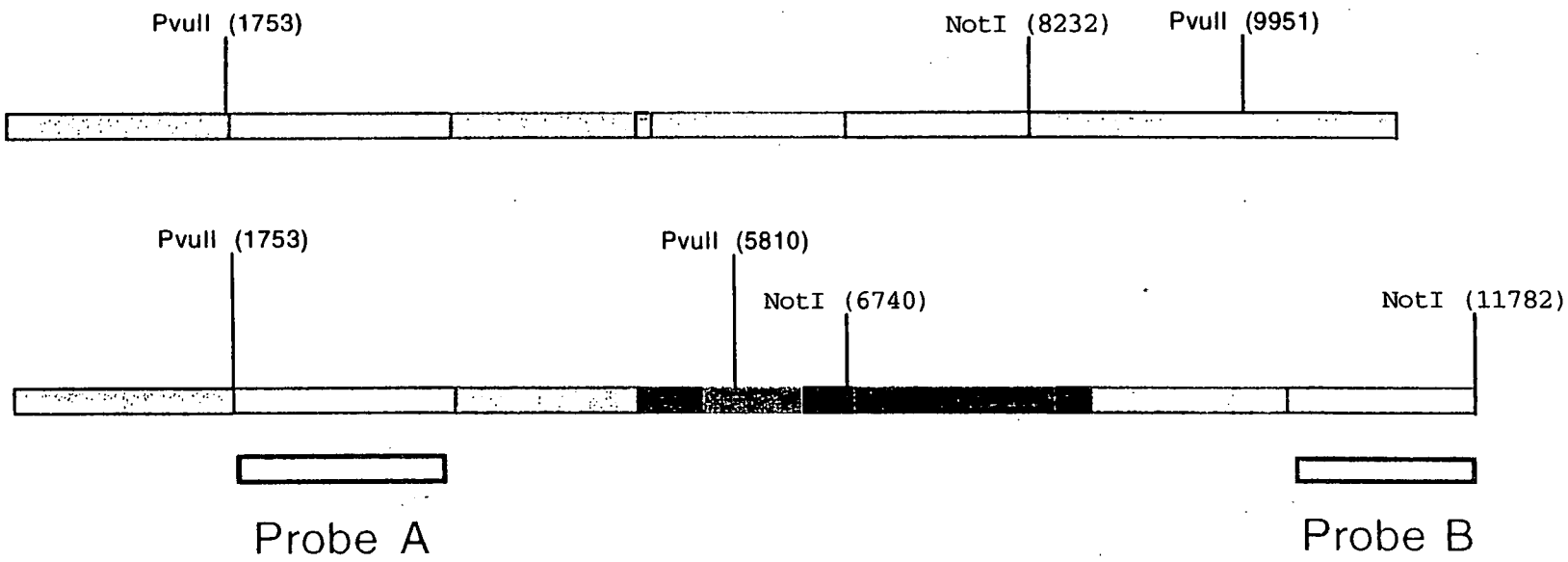

FIG. 8

Generation of Targeted Transgenic Mice

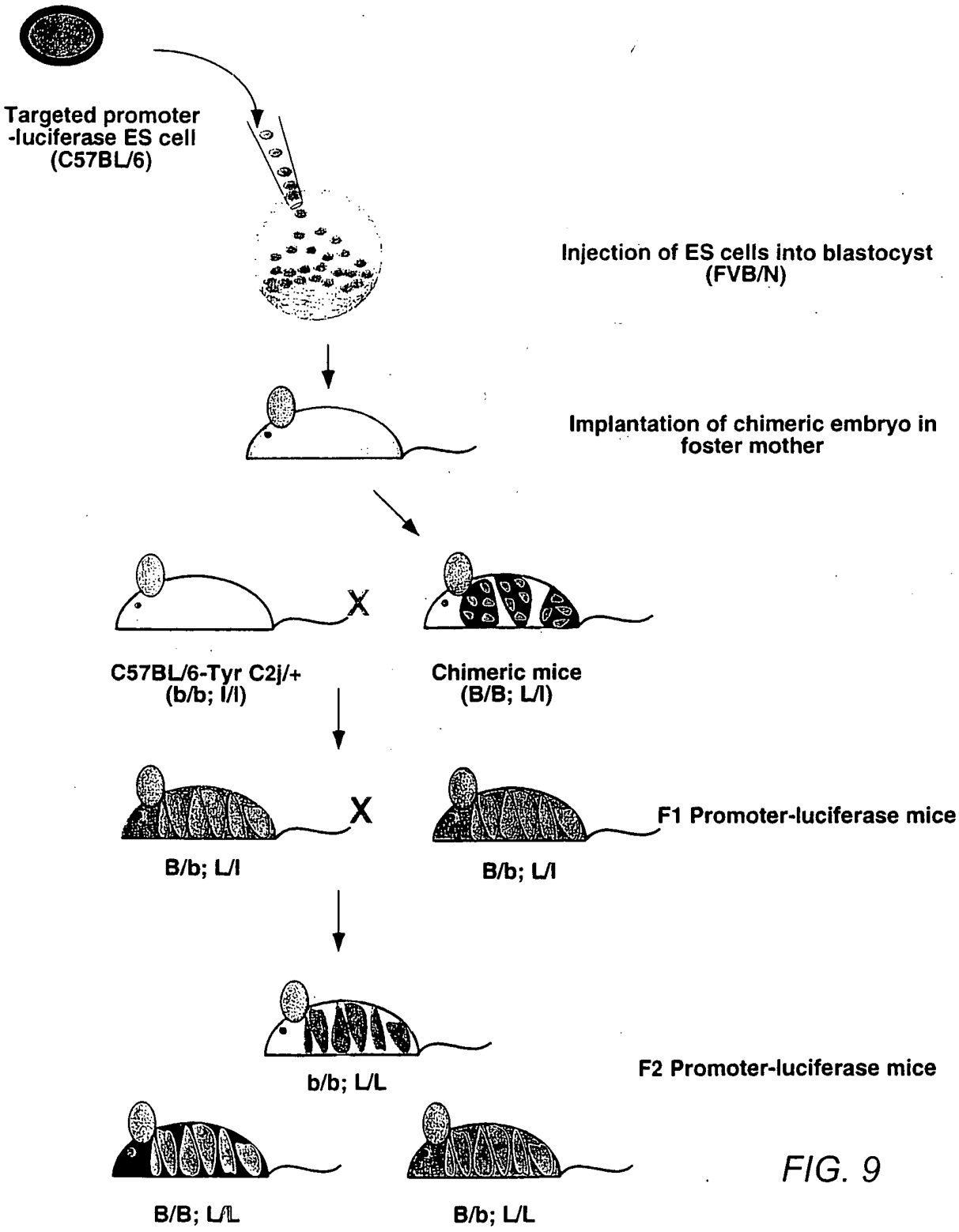

FIG. 9

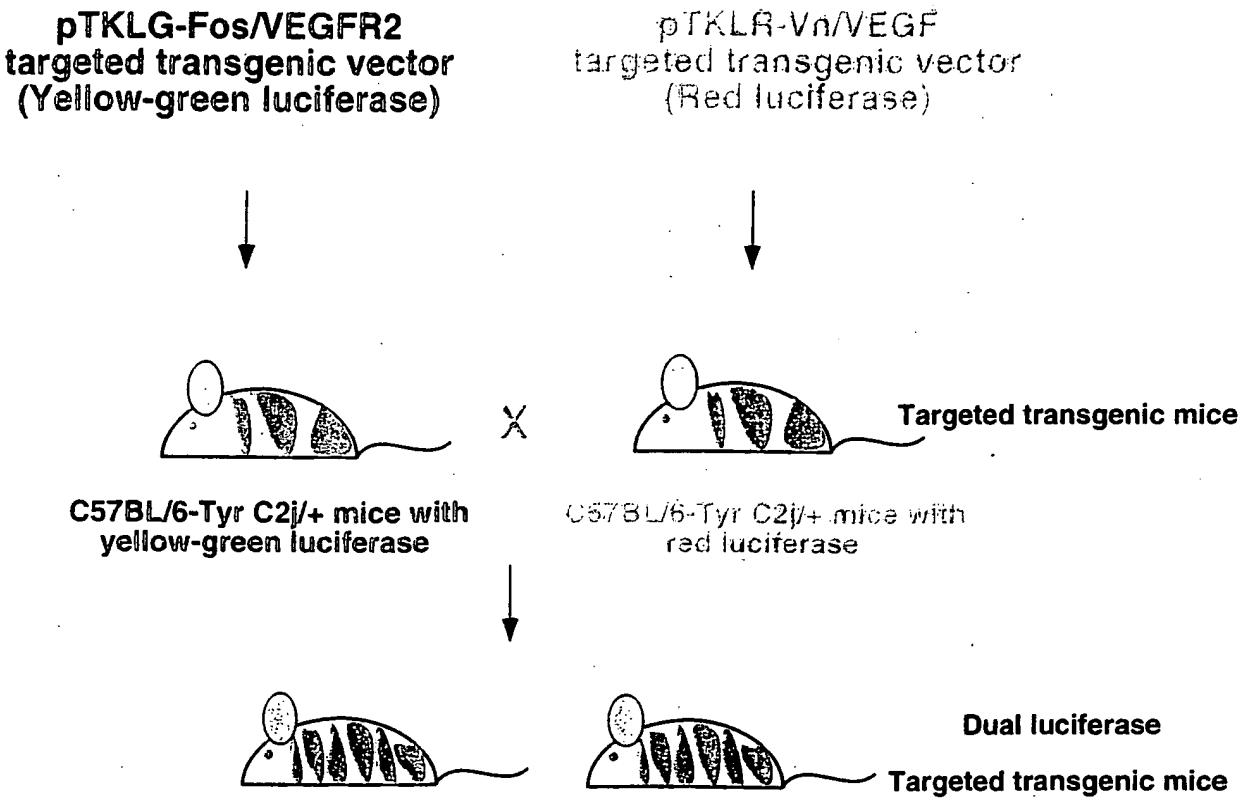

FIG. 10

```
        10         20         30         40         50         60         70         80         90        100
AAATGTGCTGTCTTTAGAAGCCACTGCCTCAGCTTCTGCAGCTCAGATACCAAAGGAAGTCTGGTACACAGCATGATAAAAGACAATGGGACGGGGTCAC
TTTACACGACAGAAATCTTCGGTGACGGAGTCGAAGACGTCGAGTCTATGGTTTCCTTCAGACCATGTGTCGTACTATTTTCTGTTACCCTGCCCCAGTG

       110        120        130        140        150        160        170        180        190        200
AGTGGCTCCCGTCCCTTTCAGGGGTATGGAGACGAGCTGTAGAGAGATGTCTCCAGGGAGTTTTCATTAATCAGCAATTTAGTCAGATCTGTGCATCCTA
TCACCGAGGGCAGGGAAAGTCCCCATACCTCTGCTCGACATCTCTCTACAGAGGTCCCTCAAAAGTAATTAGTCGTTAAATCAGTCTAGACACGTAGGAT

       210        220        230        240        250        260        270        280        290        300
TGCTTTACAAGAAATGTCAGTGGGCCTGAGATCATCAGATGGAGGTTCATCGGGTTTCAATGTCCCGTATCCTTTTGTAAGACCTTGAAGTTGGCAACGC
ACGAAATGTTCTTTACAGTCACCCGGACTCTAGTAGTCTACCTCCAAGTAGCCCAAAGTTACAGGGCATAGGAAAACATTCTGGAACTTCAACCGTTGCG

       310        320        330        340        350        360        370        380        390        400
AGGAAAACAGGAACTCCACCCTGGTGCCGTGAATTGCAGAGCTGTTGTGTTGGTTTGTGACCATCTGCCCATTCTTCCTGTTATGACAGAGCTTGTGAAC
TCCTTTTGTCCTTGAGGTGGGACCACGGCACTTAACGTCTCGACAACACAACCAAACACTGGTAGACGGGTAAGAAGGACAATACTGTCTCGAACACTTG

       410        420        430        440        450        460        470        480        490        500
TTTAACTGGGACTGGGGCAAAGTCAATCCCACCTTTATACAATGAATTGCTGAAGAGGCCTTTTAAAACTTGGAGTGTGCATTGTTTATGGAAGGGCTTT
AAATTGACCCTGACCCCGTTTCAGTTAGGGTGGAAATATGTTACTTAACGACTTCTCCGGAAAATTTTGAACCTCACACGTAACAAATACCTTCCCGAAA

       510
CCTATTGGATC
GGATAACCTAG
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FIG. 11

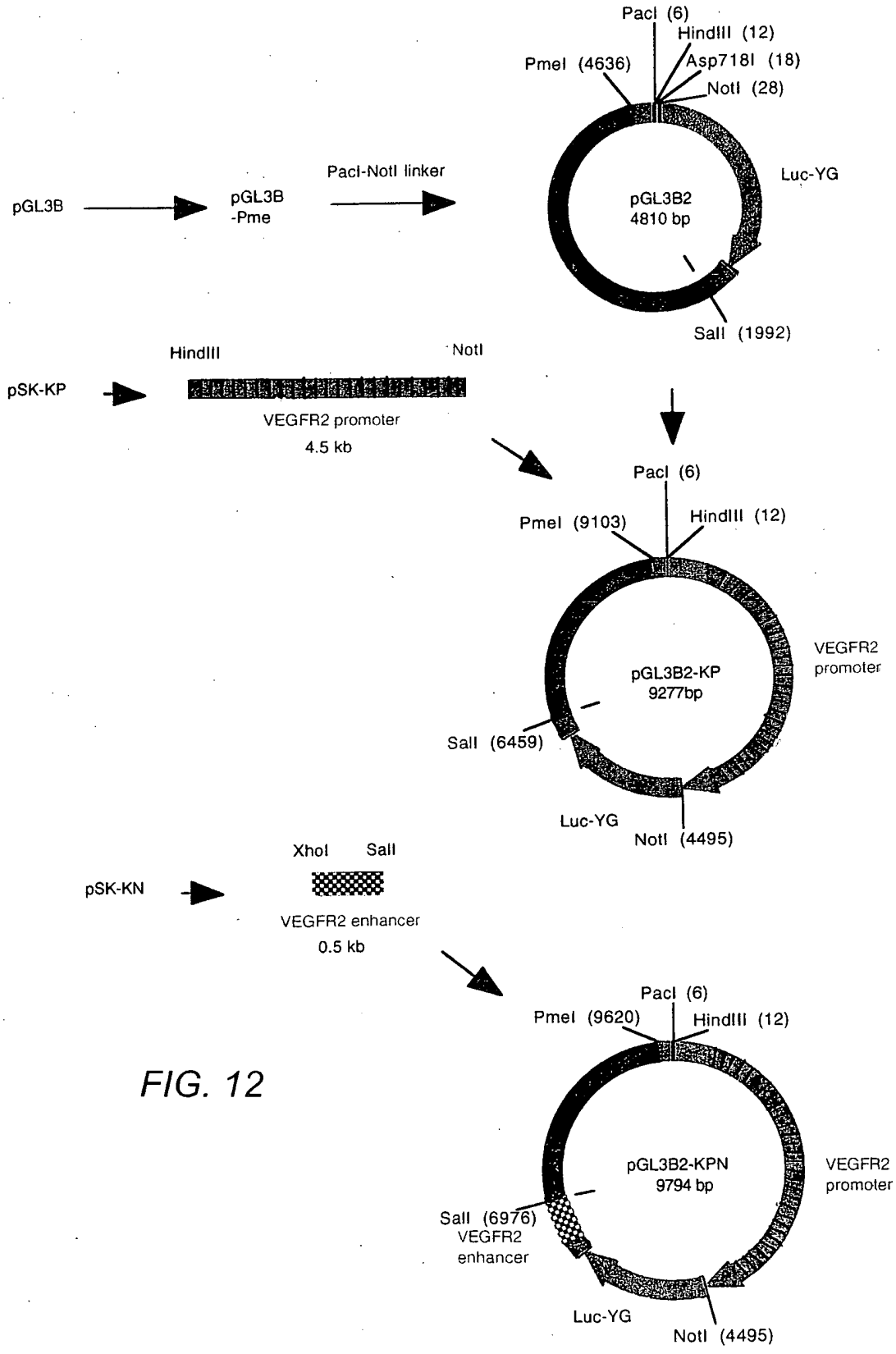

FIG. 12

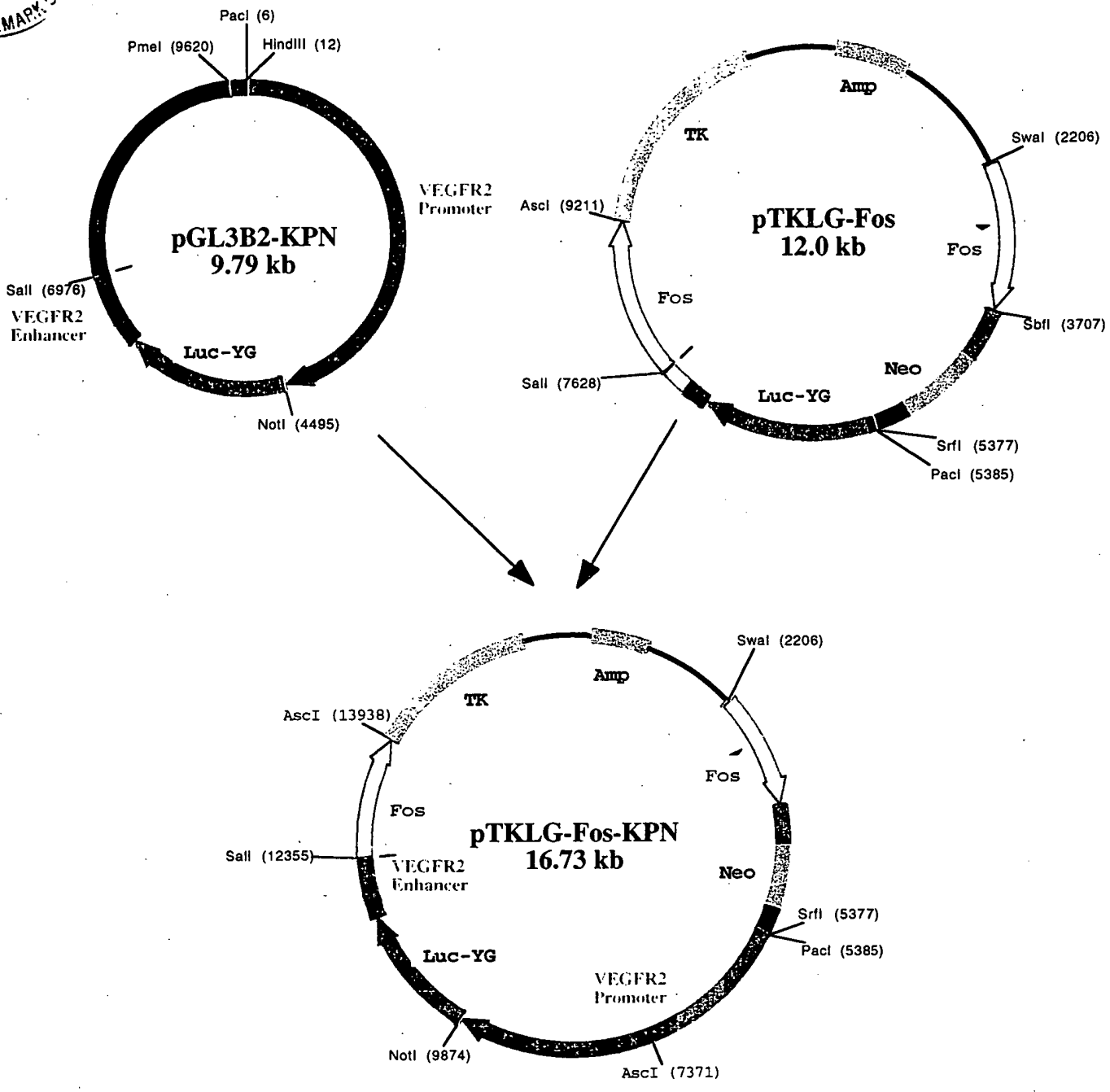

FIG. 13

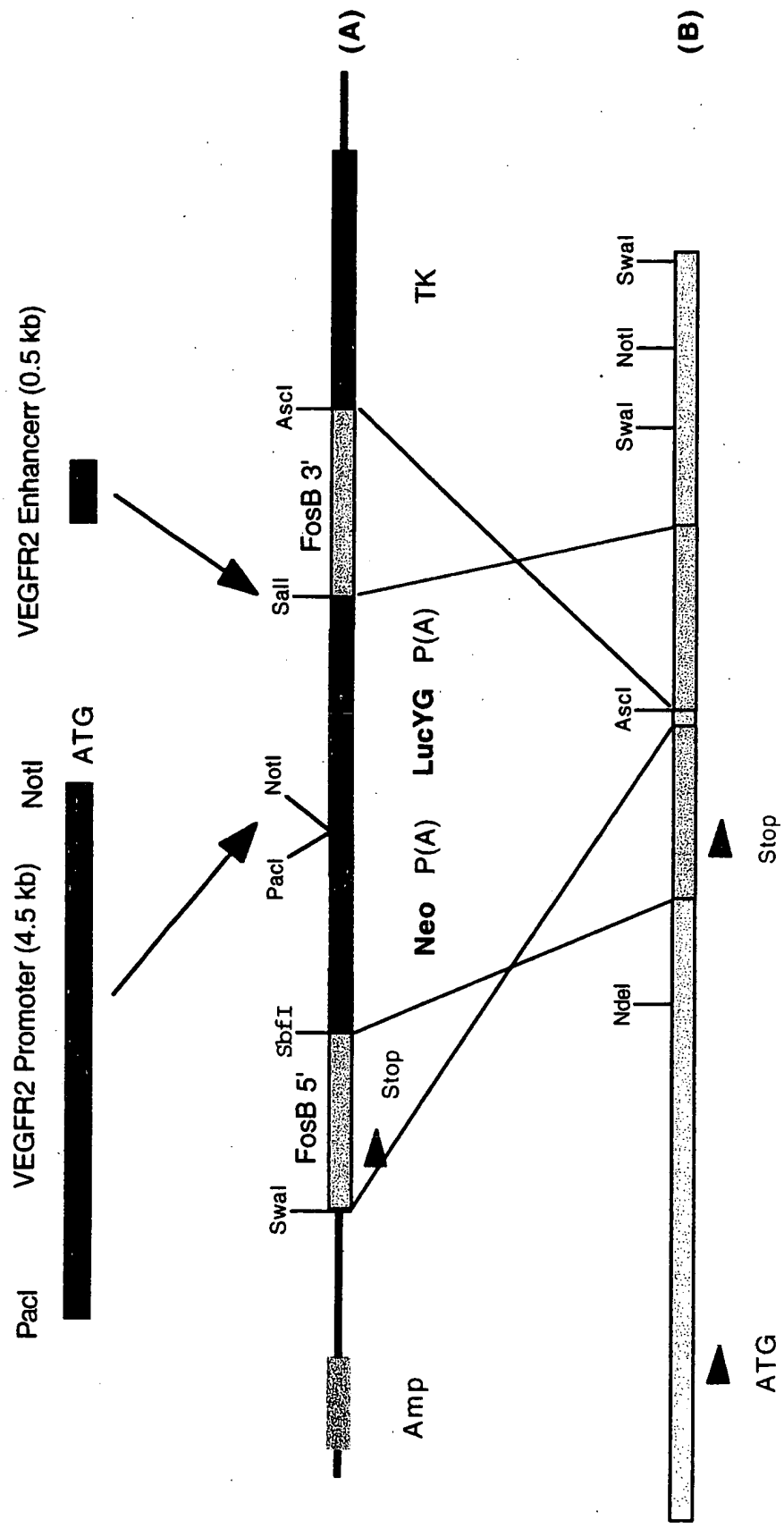

FIG. 14

```
        10         20         30         40         50         60         70         80         90        100
GGTACCAAAGCATAGAACTACAGATCCGCTCTCTGCCTGTACCACCCTCTGGCATTTAATCACACAATGCTTGGTTTTGTTCTTCAACTTTTCCTGTTAT
CCATGGTTTCGTATCTTGATGTCTAGGCGAGAGACGGACATGGTGGGAGACCGTAAATTAGTGTGTTACGAACCAAAACAAGAAGTTGAAAAGGACAATA

       110        120        130        140        150        160        170        180        190        200
GATGCAGTCCCTGGCTTGTGTAACTATGAGCTTCAAAAGCAAAGAACGCATCATCTATTTTTGTGTCTCTTCTTCCAAGGACTTAGTGTATCACTTACTG
CTACGTCAGGGACCGAACACATTGATACTCGAAGTTTTCGTTTCTTGCGTAGTAGATAAAAACACAGAGAAGAAGGTTCCTGAATCACATAGTGAATGAC

       210        220        230        240        250        260        270        280        290        300
GCTAAATGCTTGAGACAAAAACAGGGATTAATGAAGAAGAAAGAGAAAGAAAAGGAAGGGAAAGTGCCCACAATTACTGACAGGGTTTCAGTAAAGCAGT
CGATTTACGAACTCTGTTTTTGTCCCTAATTACTTCTTCTTTCTCTTTCTTTTCCTTCCCTTTCACGGGTGTTAATGACTGTCCCAAAGTCATTTCGTCA

       310        320        330        340        350        360        370        380        390        400
CTAGAGGGTCAGGTATTTTCCATAGCCATGCCCCAGAGTGGGTGTTGCCACTTTAGCTGCCCTGGTCTGGCTGAAGGCCAGGACTTGATTGTTGATGGCC
GATCTCCCAGTCCATAAAAGGTATCGGTACGGGGTCTCACCCACAACGGTGAAATCGACGGGACCAGACCGACTTCCGGTCCTGAACTAACAACTACCGG

       410        420        430        440        450        460        470        480        490        500
CTTCCTTTGCTGCTAGTCACTGTTAAGTACTGCAGATTTACAGAAAGCTTCATGGAGGTCTGTAAGAAGCCAGAGGTGATAACACCAAGATTTAGAGCCA
GAAGGAAACGACGATCAGTGACAATTCATGACGTCTAAATGTCTTTCGAAGTACCTCCAGACATTCTTCGGTCTCCACTATTGTGGTTCTAAATCTCGGT
```

FIG. 15-1

510 520 530 540 550 560 570 580 590 600
CTGACCAGCAGAATGCAGAATGTCCAGGCTATGATCCAGGTTGTAGATCCTGATCTGACTACTCAAGACTGGTTGAAGGCAAGGTTCACTTGGATTCACT
GACTGGTCGTCTTACGTCTTACAGGTCCGATACTAGGTCCAACATCTAGGACTAGACTGATGAGTTCTGACCAACTTCCGTTCCAAGTGAACCTAAGTGA

610 620 630 640 650 660 670 680 690 700
CTATTTGCCAGCAGATGTTTTAAATCCATCATATATATATATATATCTCCATTACTTTAGGACAGTGGTTCTCAGCCTTCCTAATGCTGTAGCCCTTTAA
GATAAACGGTCGTCTACAAAATTTAGGTAGTATATATATATATATAGAGGTAATGAAATCCTGTCACCAAGAGTCGGAAGGATTACGACATCGGGAAATT

710 720 730 740 750 760 770 780 790 800
TAGAGTTCCTCATATTGTGATTGTAAAAATTATTTTGTTGCTACTTCATGACTAATTTTGCTACTGTGAAAGGGTCATTTTACCCCAGGCTGTTGAGACC
ATCTCAAGGAGTATAACACTAACATTTTTAATAAAACAACGATGAAGTACTGATTAAAACGATGACACTTTCCCAGTAAAATGGGGTCCGACAACTCTGG

810 820 830 840 850 860 870 880 890 900
CACATGTTGGGAACCACTACTTTAGAAGGCATTGGGGTTGGAGAAGAACATGAAGAATAGAGTAACAGTGGTCAGTTTTGGTTCATTATATCACAGAAAC
GTGTACAACCCTTGGTGATGAAATCTTCCGTAACCCCAACCTCTTCTTGTACTTCTTATCTCATTGTCACCAGTCAAAACCAAGTAATATAGTGTCTTTG

910 920 930 940 950 960 970 980 990 1000
ATTCACTTTAAGGTTTCAGCATGTTTGTTGTGTATATGTGATTGTGTAAAGACTTCACCAGGTCTTTCTTTAATCACCATACCTAACATCTTCACCACTC
TAAGTGAAATTCCAAAGTCGTACAAACAACACATATACACTAACACATTTCTGAAGTGGTCCAGAAAGAAATTAGTGGTATGGATTGTAGAAGTGGTGAG

FIG. 15-2

1010 1020 1030 1040 1050 1060 1070 1080 1090 1100
CATATCCATCAGCTTCACCTTGTACTCTAGCATTTGGGCATTCATCCTGTACCAGGGCAGGCATCCATTCTTTTGCAACTCACATTGTTTCCTAGTTTTG
GTATAGGTAGTCGAAGTGGAACATGAGATCGTAAACCCGTAAGTAGGACATGGTCCCGTCCGTAGGTAAGAAAACGTTGAGTGTAACAAAGGATCAAAAC

1110 1120 1130 1140 1150 1160 1170 1180 1190 1200
ATTATTACCAACAATGCTTCTAGACCATGAATTTTGGTCTTTGACTTTTGCTTGGTAAACATCATAAAACAATCCAGTGGTGGTGGTGGTGCCGCTGCTG
TAATAATGGTTGTTACGAAGATCTGGTACTTAAAACCAGAAACTGAAAACGAACCATTTGTAGTATTTTGTTAGGTCACCACCACCACCACGGCGACGAC

1210 1220 1230 1240 1250 1260 1270 1280 1290 1300
CTGGTGGTGGTGGTAAAGCAGGAAGCCATAAAGTGCCTTTATTCAATCTGTATTTGATACAAATTGTTATTTCTTCCCATGTAAAAGATATGGCATCTGA
GACCACCACCACCATTTCGTCCTTCGGTATTTCACGGAAATAAGTTAGACATAAACTATGTTTAACAATAAAGAAGGGTACATTTTCTATACCGTAGACT

1310 1320 1330 1340 1350 1360 1370 1380 1390 1400
AGTGTAGAGGTCTGAATTCAAACCTCACATCACCAGATAGTATATTACAGACTCAACAAATAATACACGGCTTTGCCTGACTTCAAAGCCCTGTTCTTGA
TCACATCTCCAGACTTAAGTTTGGAGTGTAGTGGTCTATCATATAATGTCTGAGTTGTTTATTATGTGCCGAAACGGACTGAAGTTTCGGGACAAGAACT

1410 1420 1430 1440 1450 1460 1470 1480 1490 1500
CGTAAGTATATGAGTAACAATGGTAGCACCTTAGTTTTTATCAGTTCACTAAATATTTATATAAGACCTACTATGAAGGGAGATAGAAGGGTATGAGGTG
GCATTCATATACTCATTGTTACCATCGTGGAATCAAAAATAGTCAAGTGATTTATAAATATATTCTGGATGATACTTCCCTCTATCTTCCCATACTCCAC

FIG. 15-3

1510 1520 1530 1540 1550 1560 1570 1580 1590 1600
GGGTCATGGGAATAGGAAAACGGTGGAAGGGAGAAGGAGAATTAACAAAAGCTAATTATGTTTGAAAATGCCACAATGAAACCTAATTTACAAAAGAACC
CCCAGTACCCTTATCCTTTTGCCACCTTCCCTCTTCCTCTTAATTGTTTTCGATTAATACAAACTTTTACGGTGTTACTTTGGATTAAATGTTTTCTTGG

1610 1620 1630 1640 1650 1660 1670 1680 1690 1700
ACTATATGACCTTCACAGTGTGTGCTAAGTCTTGGAGATTTAGTGGTGAAGAAGTCAGGTGTGTTTCCAATCTCATGGAGGATGTAATCAGTTAGAGAGC
TGATATACTGGAAGTGTCACACACGATTCAGAACCTCTAAATCACCACTTCTTCAGTCCACACAAAGGTTAGAGTACCTCCTACATTAGTCAATCTCTCG

1710 1720 1730 1740 1750 1760 1770 1780 1790 1800
ACAGGAGCACATAAAAAGATAGGCAAAAATGTATGATTAGTACCATGTAAGATATGAAGGGGAACACAGGAAACTAGTGGGGAGACCTAATTTAGTTTGA
TGTCCTCGTGTATTTTTCTATCCGTTTTTACATACTAATCATGGTACATTCTATACTTCCCCTTGTGTCCTTTGATCACCCCTCTGGATTAAATCAAACT

1810 1820 1830 1840 1850 1860 1870 1880 1890 1900
GTGGTCTTCAAAGACCCTTTAGAAGCTGAGAACTAAAGACAGCAAGCAAGGTGAGGGCAGCATCTCCACCTTTCCAGTGGAATGAGCAACTTAGGGTATA
CACCAGAAGTTTCTGGGAAATCTTCGACTCTTGATTTCTGTCGTTCGTTCCACTCCCGTCGTAGAGGTGGAAAGGTCACCTTACTCGTTGAATCCCATAT

1910 1920 1930 1940 1950 1960 1970 1980 1990 2000
CAGCTGATTCCCACATTGTCAACAAGGCTCTTCAGAGACTAGAGATGCACTAATGATGACCATACCCAGCTTTTAAGGAAGGTTTCTGAGCATGTCCAAG
GTCGACTAAGGGTGTAACAGTTGTTCCGAGAAGTCTCTGATCTCTACGTGATTACTACTGGTATGGGTCGAAAATTCCTTCCAAAGACTCGTACAGGTTC

FIG. 15-4

```
        2010      2020      2030      2040      2050      2060      2070      2080      2090      2100
CACCCTACACTAGGCATTGGAAATCAACATGTCCAGAGATGGAAGTGACAGTCAGTAAGCCAACCCTTTTCAAAACTTCCAAAGCTATTACTCGTCAACT
GTGGGATGTGATCCGTAACCTTTAGTTGTACAGGTCTCTACCTTCACTGTCAGTCATTCGGTTGGGAAAAGTTTTGAAGGTTTCGATAATGAGCAGTTGA

        2110      2120      2130      2140      2150      2160      2170      2180      2190      2200
CTCCAGACATATGGGCCCCCGAGTGTGTTGGGAAGCTCTCATTATTGTTCTTTGATTGGTTCTCTACATTCCGAGATCCAAGGAGCAGTTATCTCAGGTAG
GAGGTCTGTATACCCGGGGGCTCACACAACCCTTCGAGAGTAATAACAAGAAACTAACCAAGAGATGTAAGGCTCTAGGTTCCTCGTCAATAGAGTCCATC

        2210      2220      2230      2240      2250      2260      2270      2280      2290      2300
AGGATCGTGGAATGTCTGCCCATGATTAACTTCAATTTATACCTGTAAGTTATACCACATCCTAAACACGCTGATGTCCCAGAGAACATTTTGACCAGCT
TCCTAGCACCTTACAGACGGGTACTAATTGAAGTTAAATATGGACATTCAATATGGTGTAGGATTTGTGCGACTACAGGGTCTCTTGTAAAACTGGTCGA

        2310      2320      2330      2340      2350      2360      2370      2380      2390      2400
GCTAACAAAACCCAGGAGCATTTAGAAAAAAACTGAGTCACCCACCGTTCTGGATAATGATGGAGAGAAACAAATGGGATTATTCTTACAGAGTATGAAA
CGATTGTTTTGGGTCCTCGTAAATCTTTTTTTGACTCAGTGGGTGGCAAGACCTATTACTACCTCTCTTTGTTTACCCTAATAAGAATGTCTCATACTTT

        2410      2420      2430      2440      2450      2460      2470      2480      2490      2500
GTTACATAATTTTCCTGGATAATGGAGAATTAATTAAACATCAGCATCTTTTCTGGACTGCAGAGGGAAGACAGAGGTGAAGCCAATCTTTCCGGGAAAT
CAATGTATTAAAAGGACCTATTACCTCTTAATTAATTTGTAGTCGTAGAAAAGACCTGACGTCTCCCTTCTGTCTCCACTTCGGTTAGAAAGGCCCTTTA
```

FIG. 15-5

2510 2520 2530 2540 2550 2560 2570 2580 2590 2600
GGAGGAGGAAAGAATTTGACTACTATTTGGGGGTTAACAATACATCTTACTAGCATGGCAAAGGAAACTGGGCTGCTTTTCAGAGTAAGCCACCCCAGTA
CCTCCTCCTTTCTTAAACTGATGATAAACCCCCAATTGTTATGTAGAATGATCGTACCGTTTCCTTTGACCCGACGAAAAGTCTCATTCGGTGGGGTCAT

2610 2620 2630 2640 2650 2660 2670 2680 2690 2700
GATGCTGCAAGGCTGTGCTTTCATCCCAGGAGAAAGTCAACAGGGCCAGGCATGCCAGAACATGCCCATAATGTAACCACTTAGGCTGAGGCAGAAAGAT
CTACGACGTTCCGACACGAAAGTAGGGTCCTCTTTCAGTTGTCCCGGTCCGTACGGTCTTGTACGGGTATTACATTGGTGAATCCGACTCCGTCTTTCTA

2710 2720 2730 2740 2750 2760 2770 2780 2790 2800
CAAAAATCCCAGGCCAGCTTAGTTTGTGTAACAAGACCTTTGCTCAAACAAAGATTTACAAAACAAACAAGCAAACAAACAAATATAAAAAAGGAGAAGA
GTTTTTAGGGTCCGGTCGAATCAAACACATTGTTCTGGAAACGAGTTTGTTTCTAAATGTTTTGTTTGTTCGTTTGTTTGTTTATATTTTTTCCTCTTCT

2810 2820 2830 2840 2850 2860 2870 2880 2890 2900
AAATAACTGCCAGGGGAGGCTGTGAGCAATGAAGACTTGATGAGTGACCATCTCGCACAGTGGACGCTTGTGTCTAGAAGGTAAGGGCTTGGCAATGTTT
TTTATTGACGGTCCCCTCCGACACTCGTTACTTCTGAACTACTCACTGGTAGAGCGTGTCACCTGCGAACACAGATCTTCCATTCCCGAACCGTTACAAA

2910 2920 2930 2940 2950 2960 2970 2980 2990 3000
CCCAGGTTTTCCATTCCTGGTTTATATGGCTTGAGGCCAGTGGACTTCACAATGTCTCAGCTTCCAGGTCTTTATACAGAGCATATTAGCCACATGTGGT
GGGTCCAAAAGGTAAGGACCAAATATACCGAACTCCGGTCACCTGAAGTGTTACAGAGTCGAAGGTCCAGAAATATGTCTCGTATAATCGGTGTACACCA

FIG. 15-6

3010 3020 3030 3040 3050 3060 3070 3080 3090 3100
AGCTTGTGCCTGTAATGCTGGCACTTGAGAGACCAAGACAGGAGGATTGCCACAAGTCTCCATCCAGCCTAGGTGCTGTGTCACTCTGTCTCACCCCTGA
TCGAACACGGACATTACGACCGTGAACTCTCTGGTTCTGTCCTCCTAACGGTGTTCAGAGGTAGGTCGGATCCACGACACAGTGAGACAGAGTGGGGACT

3110 3120 3130 3140 3150 3160 3170 3180 3190 3200
CCCAGTCCCACCCAACATCAAACAGGCTATCACTGTGACACTGGTACTGAGTCAGAATCACCCAGATTAAAGATTCTGGGAGATCAGTCCTGGGGATGCG
GGGTCAGGGTGGGTTGTAGTTTGTCCGATAGTGACACTGTGACCATGACTCAGTCTTAGTGGGTCTAATTTCTAAGACCCTCTAGTCAGGACCCCTACGC

3210 3220 3230 3240 3250 3260 3270 3280 3290 3300
GGAAGTGAGACCAGTTATTTAATAATTCTTATACTCATGAGATGATGGATCCAGATGAGAAATTGTAAAAATTTTAGGTTTTATAATTGAAGAAATAGGT
CCTTCACTCTGGTCAATAAATTATTAAGAATATGAGTACTCTACTACCTAGGTCTACTCTTTAACATTTTTAAAATCCAAAATATTAACTTCTTTATCCA

3310 3320 3330 3340 3350 3360 3370 3380 3390 3400
GGTTTCTTCAGGTTACATCTCTCCACTGTTGGTCATTTCAGCTAAGGTCACTCCCCATTGATTCCTGTGAGGCTCTCACATCCCAGGTCTCTGGGACTTT
CCAAAGAAGTCCAATGTAGAGAGGTGACAACCAGTAAAGTCGATTCCAGTGAGGGGTAACTAAGGACACTCCGAGAGTGTAGGGTCCAGAGACCCTGAAA

3410 3420 3430 3440 3450 3460 3470 3480 3490 3500
CTAGAGGTTCCCGCTGCTTCCCAGCCCTGAAAATGCGTATTTCTATTCATTCTCCTGGCATTCTGGGCTTCTCTCCTGTCCCCCGCCCCACCCAACACCT
GATCTCCAAGGGCGACGAAGGGTCGGGACTTTTACGCATAAAGATAAGTAAGAGGACCGTAAGACCCGAAGAGAGGACAGGGGGCGGGGTGGGTTGTGGA

FIG. 15-7

3510 3520 3530 3540 3550 3560 3570 3580 3590 3600
GATCCTGCCCCCTTTCTCTCCCCCTTCTCTCTCTAAACCAGGTCCCTCCCTCCCTCTGCTTCCCATGATTATTTTGTTCCCTCCTCTAAATGAGTCTGAA
CTAGGACGGGGGAAAGAGAGGGGGAAGAGAGAGATTTGGTCCAGGGAGGGAGGGAGACGAAGGGTACTAATAAAACAAGGGAGGAGATTTACTCAGACTT

3610 3620 3630 3640 3650 3660 3670 3680 3690 3700
GCATCCTCACTTGGACNTTCCTTCTTGTTAAACTTCATATGGTCTGTGAGTTGTATCATGGGTATTCTGTACTTTTTTGGCTAATGTTTCACTTATCAGT
CGTAGGAGTGAACCTGNAAGGAAGAACAATTTGAAGTATACCAGACACTCAACATAGTACCCATAAGACATGAAAAAACCGATTACAAAGTGAATAGTCA

3710 3720 3730 3740 3750 3760 3770 3780 3790 3800
GAGTGCAAACCAGGCATATCCTTTTGAGTTTGGGTTACCTCACTCAGGATGATATTTTCTAGTTCTATCCATTCGCCTGCAAAATTCATGATGTCCTAAT
CTCACGTTTGGTCCGTATAGGAAAACTCAAACCCAATGGAGTGAGTCCTACTATAAAAGATCAAGATAGGTAAGCGGACGTTTTAAGTACTACAGGATTA

3810 3820 3830 3840 3850 3860 3870 3880 3890 3900
TTTTAGTAGCTGAATAGTATTCCATTGTGTAAATGAACCATATTTTCTGCATCTGTTCTTCAGCTGAGGGAAATCTGGGTTGTTTCCAGCTTCTAGGTAT
AAAATCATCGACTTATCATAAGGTAACACATTTACTTGGTATAAAAGACGTAGACAAGAAGTCGACTCCCTTTAGACCCAACAAAGGTCGAAGATCCATA

3910 3920 3930 3940 3950 3960 3970 3980 3990 4000
TATAAATAAGGTTGCTATGAACATAGTGGAACACATATCCTTGAGGTATGGTAGAGCATCTTTTGGGTATATATCCAGGAGTGGATAGTTGGGTTTTCAG
ATATTTATTCCAACGATACTTGTATCACCTTGTGTATAGGAACTCCATACCATCTCGTAGAAAACCCATATATAGGTCCTCACCTATCAACCCAAAAGTC

FIG. 15-8

```
      4010       4020       4030       4040       4050       4060       4070       4080       4090       4100
GTAGAACTATTTCCAATTTTCTAAGGAACCACCAGATTGATTTTTAGATAGACAGGGCCCCTAGTGGAGAGATGGGGCCAAACACCTACCTTCAAAAATT
CATCTTGATAAAGGTTAAAAGATTCCTTGGTGGTCTAACTAAAAATCTATCTGTCCCGGGGATCACCTCTCTACCCCGGTTTGTGGATGGAAGTTTTTAA

      4110       4120       4130       4140       4150       4160       4170       4180       4190       4200
TGGTCCAGAATTGTTCCTCTCTAAAAGAAATGCAGGGACAAAAATGAAACAGAGACTGACCAACCCAACTTAGGATCCATCCTATGGGCAAGCACCAAAC
ACCAGGTCTTAACAAGGAGAGATTTTCTTTACGTCCCTGTTTTTACTTTGTCTCTGACTGGTTGGGTTGAATCCTAGGTAGGATACCCGTTCGTGGTTTG

      4210       4220       4230       4240       4250       4260       4270       4280       4290       4300
CCAGACTCTATTATTGATGCCATGTTGTGCTTGCAGACAGGAGCTTAGCATGGCTGTCCTCTGAGACACTCTATCAGCAGCTGACTGGGACAGATGCAGA
GGTCTGAGATAATAACTACGGTACAACACGAACGTCTGTCCTCGAATCGTACCGACAGGAGACTCTGTGAGATAGTCGTCGACTGACCCTGTCTACGTCT

      4310       4320       4330       4340       4350       4360       4370       4380       4390       4400
TGCCAACCCTTGAACTGAGGTCCAGGACCCCTATGGAAGAATTAGGGGAAGGTTTGAAGGAGCTGAAGGGGATGGCAACCCCATAGGAAAAACAAGTGTC
ACGGTTGGGAACTTGACTCCAGGTCCTGGGGATACCTTCTTAATCCCCTTCCAAACTTCCTCGACTTCCCCTACCGTTGGGGTATCCTTTTTGTTCACAG

      4410       4420       4430       4440       4450       4460       4470       4480       4490       4500
AACTAACCCTCAGAGCTCCCAGAGACTAAGCCACCAACTAAAGAGCATACATGGGCTGGTTTGTGGTCCCTGGCAGAGGACTGCCTTGTCTGGCCTCAGT
TTGATTGGGAGTCTCGAGGGTCTCTGATTCGGTGGTTGATTTCTCGTATGTACCCGACCAAACACCAGGGACCGTCTCCTGACGGAACAGACCGGAGTCA
```

FIG. 15-9

```
      4510       4520       4530       4540       4550       4560       4570       4580       4590       4600
AGGAGAGGATGTGCCTAATCCTCTAGAGACTTGATGCCCCAGGGAAGGGGACAAGGAGGGGACAAGGTGGGGATTGGTGTGGGGTAGTGGGGGTTGGGGG
TCCTCTCCTACACGGATTAGGAGATCTCTGAACTACGGGGTCCCTTCCCCTGTTCCTCCCCTGTTCCACCCCTAACCACACCCCATCACCCCCAACCCCC

      4610       4620       4630       4640       4650       4660       4670       4680       4690       4700
TGGGGGTGGGGATGTGAATGGGTGAGTGAGGGAGGGAATGAGTGAGTGGGTGGTACAGCATCCTCTCAGAGGCAAAGGGGAAGGGGAGTGGATAACAAAC
ACCCCCACCCCTACACTTACCCACTCACTCCCTCCCTTACTCACTCACCCACCATGTCGTAGGAGAGTCTCCGTTTCCCCTTCCCCTCACCTATTGTTTG

      4710       4720       4730       4740       4750       4760       4770       4780       4790       4800
TCTGGGAGCAGGGACGGGGAAGGAGGGCAACATTTGTAATTAAATAAATAAAATAATTTAATAAAAAAAATGAAGAAACAGGATAACTTGGGAATGGTTA
AGACCCTCGTCCCTGCCCCTTCCTCCCGTTGTAAACATTAATTTATTTATTTTATTAAATTATTTTTTTTACTTCTTTGTCCTATTGAACCCTTACCAAT

      4810       4820       4830       4840       4850       4860       4870       4880       4890       4900
CAGCAGGGCTGGGATTAGAACCCAAAAAGTTTATTCTGAGACTCTTTTCCAATACCAAGCTTAAAGTTTTCTTCAGAATTCTATAGAATGCCTTTTTGGC
GTCGTCCCGACCCTAATCTTGGGTTTTTCAAATAAGACTCTGAGAAAAGGTTATGGTTCGAATTTCAAAAGAAGTCTTAAGATATCTTACGGAAAAACCG

      4910       4920       4930       4940       4950       4960       4970       4980       4990       5000
AGAAGTTCTTTGGACTTTAATAAAGAACATATTGAAGAGATGAAAAGAAGCTTACTAAGATCTAATGAAAATCAAGATGCTAGGCACAGTGCCAGATACT
TCTTCAAGAAACCTGAAATTATTTCTTGTATAACTTCTCTACTTTTCTTCGAATGATTCTAGATTACTTTTAGTTCTACGATCCGTGTCACGGTCTATGA
```

FIG. 15-10

5010 5020 5030 5040 5050 5060 5070 5080 5090 5100
TTAACATAGTAATATGACTCTTTAGAGTTTTGAGACAGGGCCTCATATAGTTTATGATGAATTCACTGTTTTGTCAAAGATGACCTTGAACTCTTAATCC
AATTGTATCATTATACTGAGAAATCTCAAAACTCTGTCCCGGAGTATATCAAATACTACTTAAGTGACAAAACAGTTTCTACTGGAACTTGAGAATTAGG

5110 5120 5130 5140 5150 5160 5170 5180 5190 5200
ATTCCCAAAGTGTTGTTGTCATATGTTTGCACCACTCCTGGCTTCATAGTGTTTTTAAAACACCCATGGAGAGTCGGGTGTGAAGATCCACACGTCTAAC
TAAGGGTTTCACAACAACAGTATACAAACGTGGTGAGGACCGAAGTATCACAAAAATTTTGTGGGTACCTCTCAGCCCACACTTCTAGGTGTGCAGATTG

5210 5220 5230 5240 5250 5260 5270 5280 5290 5300
CTCAGCATCTGGTGAATCAAGGCAGGAGGGCGGGTGGTTGCAGGCTGGCTATAATATCTAAGTTTCAGTTAGTAAGGGCTGCATAATGAAACACTGTCTT
GAGTCGTAGACCACTTAGTTCCGTCCTCCCGCCCACCAACGTCCGACCGATATTATAGATTCAAAGTCAATCATTCCCGACGTATTACTTTGTGACAGAA

5310 5320 5330 5340 5350 5360 5370 5380 5390 5400
AAACACAAAACCAAAACCCATGAAGGAGATACTATTGCCATTTAAAAGTCTCTGGAATGGAAATAGCTATCATAATCTTACCTCTGAGCCAGTGTCTGCC
TTTGTGTTTTGGTTTTGGGTACTTCCTCTATGATAACGGTAAATTTTCAGAGACCTTACCTTTATCGATAGTATTAGAATGGAGACTCGGTCACAGACGG

5410 5420 5430 5440 5450 5460 5470 5480 5490 5500
CTCAGGTGTGCCTGAGGACTGAACAGGGCTATGCACTCCTCAGGTTGGAAACATTACTAGTCCTCAGTGTCTGCTCTTGACCTGTTAACAGCTGAGTCAG
GAGTCCACACGGACTCCTGACTTGTCCCGATACGTGAGGAGTCCAACCTTTGTAATGATCAGGAGTCACAGACGAGAACTGGACAATTGTCGACTCAGTC

FIG. 15-11

5510 5520 5530 5540 5550 5560 5570 5580 5590 5600
GGTCTGCCCTCAGCTGTGCCTGAGGACAGAGCTGAGCTATCTACCCCTGCAGATTGGAAGCATTACAGGCACTCAAGATCAGCCCTGAAGTGATAAAACC
CCAGACGGGAGTCGACACGGACTCCTGTCTCGACTCGATAGATGGGGACGTCTAACCTTCGTAATGTCCGTGAGTTCTAGTCGGGACTTCACTATTTTGG

5610 5620 5630 5640 5650 5660 5670 5680 5690 5700
TAAGGCAGAAATCCACCAAGACTAGCAGTGCCTCCGTGTCTCTTCCTGTGGCTGGTGGGAAAGAGAGGGGCAGTCCTTCCTTGATGCAAGGTCGTGTGTC
ATTCCGTCTTTAGGTGGTTCTGATCGTCACGGAGGCACAGAGAAGGACACCGACCACCCTTTCTCTCCCCGTCAGGAAGGAACTACGTTCCAGCACACAG

5710 5720 5730 5740 5750 5760 5770 5780 5790 5800
TAGTGGCACGCTTCCTTCATTCCCAGTGAGAGCAAGTGATCACCTGGGTAAGGAAGGTTCAGGTGCCTGAGCTCGCTGGAGAATTCATCACTCATCCATC
ATCACCGTGCGAAGGAAGTAAGGGTCACTCTCGTTCACTAGTGGACCCATTCCTTCCAAGTCCACGGACTCGAGCGACCTCTTAAGTAGTGAGTAGGTAG

5810 5820 5830 5840 5850 5860 5870 5880 5890 5900
ACTCTGCTCCTGTAGACATAATCACTTCTGTTGGGTCTTTATAGAGATGATTTATAACTTTGTTGTTTATAGTTTTTATGAATGTGTGTATTCATTTAGG
TGAGACGAGGACATCTGTATTAGTGAAGACAACCCAGAAATATCTCTACTAAATATTGAAACAACAAATATCAAAAATACTTACACACATAAGTAAATCC

5910 5920 5930 5940 5950 5960 5970 5980 5990 6000
TCACATGGGAGGTACACATTTTCAGGTGTCTGTCTTTCCATCACACGGGCTTTGAATTAAACTCAGTCTTGGTTTTACCGGCTGAGCCATCTCACCTGCC
AGTGTACCCTCCATGTGTAAAAGTCCACAGACAGAAAGGTAGTGTGCCCGAAACTTAATTTGAGTCAGAACCAAAATGGCCGACTCGGTAGAGTGGACGG

FIG. 15-12

```
      6010       6020       6030       6040       6050       6060       6070       6080       6090       6100
TGATTATTTAAAAATCTCCGGAGTAATCCAGGAGTGTGGTTTATGATTGTAGTATCAACACTCGGGAGGCTGAGGGAGCATCGTTATCATGAGCTCCAGG
ACTAATAAATTTTTAGAGGCCTCATTAGGTCCTCACACCAAATACTAACATCATAGTTGTGAGCCCTCCGACTCCCTCGTAGCAATAGTACTCGAGGTCC

      6110       6120       6130       6140       6150       6160       6170       6180       6190       6200
CTAGTTCCAGGCTTGCCTAAGCTGTAGAGCAAGTCACTCTCTTAAAAAGTGCCTCTCCCATATTTTTGTATATAATTTGCATCTGAAATTCTGTTTGCCA
GATCAAGGTCCGAACGGATTCGACATCTCGTTCAGTGAGAGAATTTTTCACGGAGAGGGTATAAAAACATATATTAAACGTAGACTTTAAGACAAACGGT

      6210       6220       6230       6240       6250       6260       6270       6280       6290       6300
ATAACTATGAAATTATTCACATTACTAAAATCTTCCTGTGCCAAGTTCTCCAACGAATTAGATCACACTCAGATGAAATGCTAATAAAAATTAAAGCTGT
TATTGATACTTTAATAAGTGTAATGATTTTAGAAGGACACGGTTCAAGAGGTTGCTTAATCTAGTGTGAGTCTACTTTACGATTATTTTTAATTTCGACA

      6310       6320       6330       6340       6350       6360       6370       6380       6390       6400
AGCCAGTAGCATGCGTATATTTGGGCTCAGGGCCAACAGGCAGGCGATCTGGGTGTAAGAAAATAGGCTAATGGCTGTGGAATCTGGTCTCTAGTGGCTC
TCGGTCATCGTACGCATATAAACCCGAGTCCCGGTTGTCCGTCCGCTAGACCCACATTCTTTTATCCGATTACCGACACCTTAGACCAGAGATCACCGAG

      6410       6420       6430       6440       6450       6460       6470       6480       6490       6500
CGCTGAGAGCTGACCTCAACCACGCTCCCTCAAATTGATTGCCTTCCAGGTTATGATTTCTCATCACAGGAAACTTTGTTGCCCAATTCAAACCCTGTGA
GCGACTCTCGACTGGAGTTGGTGCGAGGGAGTTTAACTAACGGAAGGTCCAATACTAAAGAGTAGTGTCCTTTGAAACAACGGGTTAAGTTTGGGACACT
```

FIG. 15-13

```
      6510       6520       6530       6540       6550       6560       6570       6580       6590       6600
GTGAAAACAAAAACAGGAGAGCAAGTGCTGCTCCCCGTGCCCCAAAGCCCCTTCTGTCAGGGATCCCAAATGCACCCCAGAGAACAGCTTAGCCTGCAAG
CACTTTTGTTTTTGTCCTCTCGTTCACGACGAGGGGCACGGGGTTTCGGGGAAGACAGTCCCTAGGGTTTACGTGGGGTCTCTTGTCGAATCGGACGTTC

      6610       6620       6630       6640       6650       6660       6670       6680       6690       6700
GGCTGGTCCTCATCGCATACCATACATAGGTGGAGGGCTTGTTATTCAATTCCTGGCCTATGAGAGGATACCCCTATTGTTCCTGAAAATGCTGACCAGG
CCGACCAGGAGTAGCGTATGGTATGTATCCACCTCCCGAACAATAAGTTAAGGACCGGATACTCTCCTATGGGGATAACAAGGACTTTTACGACTGGTCC

      6710       6720       6730       6740       6750       6760       6770       6780       6790       6800
ACCTTACTTGTAACAAAGATCCCTCTGCCCCACAATCCAGTTAAGGCAGGAGCAGGAGCCGGAGCAGGAGCAGAAGATAAGCCTTGGATGAAGGGCAAGA
TGGAATGAACATTGTTTCTAGGGAGACGGGGTGTTAGGTCAATTCCGTCCTCGTCCTCGGCCTCGTCCTCGTCTTCTATTCGGAACCTACTTCCCGTTCT

      6810       6820       6830       6840       6850       6860       6870       6880       6890       6900
TGGATAGGGCTCGCTCTGCCCCAAGCCCTGCTGATACCAAGTGCCTTTAAGATACAGCCTTTCCCATCCTAATCTGCAAAGGAAACAGGAAAAAGGAACT
ACCTATCCCGAGCGAGACGGGGTTCGGGACGACTATGGTTCACGGAAATTCTATGTCGGAAAGGGTAGGATTAGACGTTTCCTTTGTCCTTTTTCCTTGA

      6910       6920       6930       6940       6950       6960       6970       6980       6990       7000
TAACCCTCCCTGTGCTCAGACAGAAATGAGACTGTTACCGCCTGCTTCTGTGGTGTTTCTCCTTGCCGCCAACTTGTAAACAAGAGCGAGTGGACCATGC
ATTGGGAGGGACACGAGTCTGTCTTTACTCTGACAATGGCGGACGAAGACACCACAAAGAGGAACGGCGGTTGAACATTTGTTCTCGCTCACCTGGTACG

      7010       7020       7030       7040       7050       7060       7070       7080       7090
GAGCGGGAAGTCGCAAAGTTGTGAGTTGTTGAAAGCTTCCCAGGGACTCATGCTCATCTGTGGACGCTGGATGGGGAGATCTGGGGAAGTATG
CTCGCCCTTCAGCGTTTCAACACTCAACAACTTTCGAAGGGTCCCTGAGTACGAGTAGACACCTGCGACCTACCCCTCTAGACCCCTTCATAC
```

FIG. 15-14

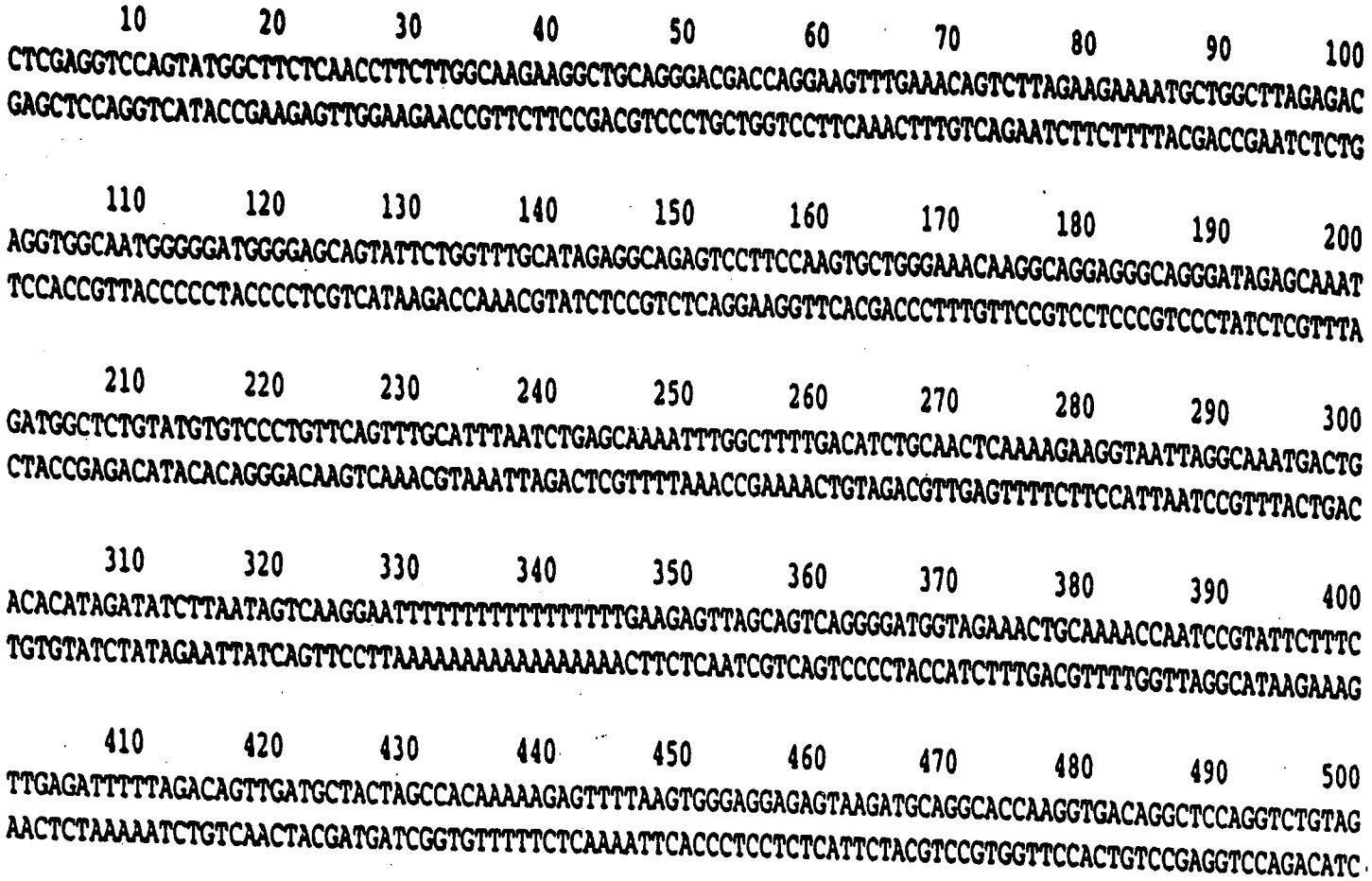

FIG. 16A

```
      510        520        530        540        550        560        570        580        590        600
CATTAGCTTACAGATGAGATTCTTTACAGAGAGCCAGGCAGCTGCATTGGCTAAAGCAGATCTGGGAGGGGGCCAGGAGATCAGCTGGCGGCACTCCCAG
GTAATCGAATGTCTACTCTAAGAAATGTCTCTCGGTCCGTCGACGTAACCGATTTCGTCTAGACCCTCCCCCGGTCCTCTAGTCGACCGCCGTGAGGGTC

      610        620        630        640        650        660        670        680        690        700
CCTCCAGGAAAGGCAACCCTTATTTCTGGAATTTTAAACTGATAACCCAATTCCCACCAGCCTGGCCAGGCTCTTCCTTAGCTCACATCACAAACACAGA
GGAGGTCCTTTCCGTTGGGAATAAAGACCTTAAAATTTGACTATTGGGTTAAGGGTGGTCGGACCGGTCCGAGAAGGAATCGAGTGTAGTGTTTGTGTCT

      710        720        730        740        750        760        770        780        790        800
AGGATTGTTTTAGATGGAGTCATGCTTGATTCTTTCTATACCTACTTCCAAGACCAATTTTATAAAAGTTTATTTACCGCCCGTGTGTGTGTGTGTGTGT
TCCTAACAAAATCTACCTCAGTACGAACTAAGAAAGATATGGATGAAGGTTCTGGTTAAAATATTTTCAAATAAATGGCGGGCACACACACACACACACA

      810        820        830        840        850        860        870        880        890        900
GTGTGTGTGTGTGTGTGTGTGTGTGCATGGTATATATGGATGTCAGAGTTTGGTTCTCTCCTTCTGCAGTGTGGCTCTTAGAGATTGAACTCAGAT
CACACACACACACACACACACACACACGTACCATATATACCTACAGTCTCAAACCAAGAGAGGAAGACGTCACACCGAGAATCTCTAACTTGAGTCTA

      910        920        930        940        950        960        970        980        990       1000
CATGAGCAAGCACCTTGCTGCCTGCTATGTCCCTCCAGCAGTCTGACCATGTTCCTTCCCCCAAGATTGTGGAAGCTGGACTGAAGATCACAATCTGCCA
GTACTCGTTCGTGGAACGACGGACGATACAGGGAGGTCGTCAGACTGGTACAAGGAAGGGGGTTCTAACACCTTCGACCTGACTTCTAGTGTTAGACGGT

      1010       1020       1030       1040       1050       1060       1070       1080       1090       1100
GATGGGCAGAATCTTTACTCTTTGGCACATTTGTTGCTGATGGGGAGTGAATACCCATGGGGACATGGCTGTCATGGTGTGGAAGTGATAGAAATGAAAA
CTACCCGTCTTAGAAATGAGAAACCGTGTAAACAACGACTACCCCTCACTTATGGGTACCCCTGTACCGACAGTACCACACCTTCACTATCTTTACTTTT
```

FIG. 16B

```
      1110       1120       1130       1140       1150       1160       1170       1180       1190       1200
CATGTATGGATCTGTCACAGGAGCTGGTGAGGCTGATGGGTGTGTGGGTGGCCACTGTTTGCTCTCTGCTTGTCACAGCCTCTTGTTCAGGGCTTGATCA
GTACATACCTAGACAGTGTCCTCGACCACTCCGACTACCCACACACCCACCGGTGACAAACGAGAGACGAACAGTGTCGGAGAACAAGTCCCGAACTAGT

      1210       1220       1230       1240       1250       1260       1270       1280       1290       1300
GGCAGGTGTGTGTGTGTGTGTGTGTGTGTGTGTGTGTGTGTGTGTGGTCACACCCATCTCAGCAGATCTGTCAGCTTTCCCGCTTTTGTTAGAGGGTG
CCGTCCACACACACACACACACACACACACACACACACACACACACACACCAGTGTGGGTAGAGTCGTCTAGACAGTCGAAAGGGCGAAAACAATCTCCCAC

      1310       1320       1330       1340       1350       1360       1370       1380       1390       1400
ATATCATGCTTCCTGGGGGGAGCTCTGGAAGACAATGAGCAGCCACTTTCCTCTAGATACAATAGGCGGAGTCAGGAAGGTAGTATTGACATTGCTGGGG
TATAGTACGAAGGACCCCCCTCGAGACCTTCTGTTACTCGTCGGTGAAAGGAGATCTATGTTATCCGCCTCAGTCCTTCCATCATAACTGTAACGACCCC

      1410       1420       1430       1440       1450       1460       1470       1480       1490       1500
CCTAGGAGCTACTCACTGCTCGGTGGCCGTCAGATGGTGAACCGGCGTAACCTTGGCACACAGGCCTGGGCTGTACAAGGCGTCTGGCTGCAGGGCCAAA
GGATCCTCGATGAGTGACGAGCCACCGGCAGTCTACCACTTGGCCGCATTGGAACCGTGTGTCCGGACCCGACATGTTCCGCAGACCGACGTCCCGGTTT

      1510       1520       1530       1540       1550       1560       1570       1580       1590       1600
GAGGACTCCACCCTAGGGACAGGAGTACTTCAGACATCTGGGAATCTGGGATGGGTTTTAAAATTCAGATCCCAATATAAAAAAACAACTCCCAAACAAA
CTCCTGAGGTGGGATCCCTGTCCTCATGAAGTCTGTAGACCCTTAGACCCTACCCAAAATTTTAAGTCTAGGGTTATATTTTTTTGTTGAGGGTTTGTTT

      1610       1620       1630       1640       1650
CAGCAGCAATTAAAAAAAAAAAAAAAAACCAGCCTCCCAAGTAAAACAATAATGGTACC
GTCGTCGTTAATTTTTTTTTTTTTTTTGGTCGGAGGGTTCATTTTGTTATTACCATGG
```

FIG. 16C

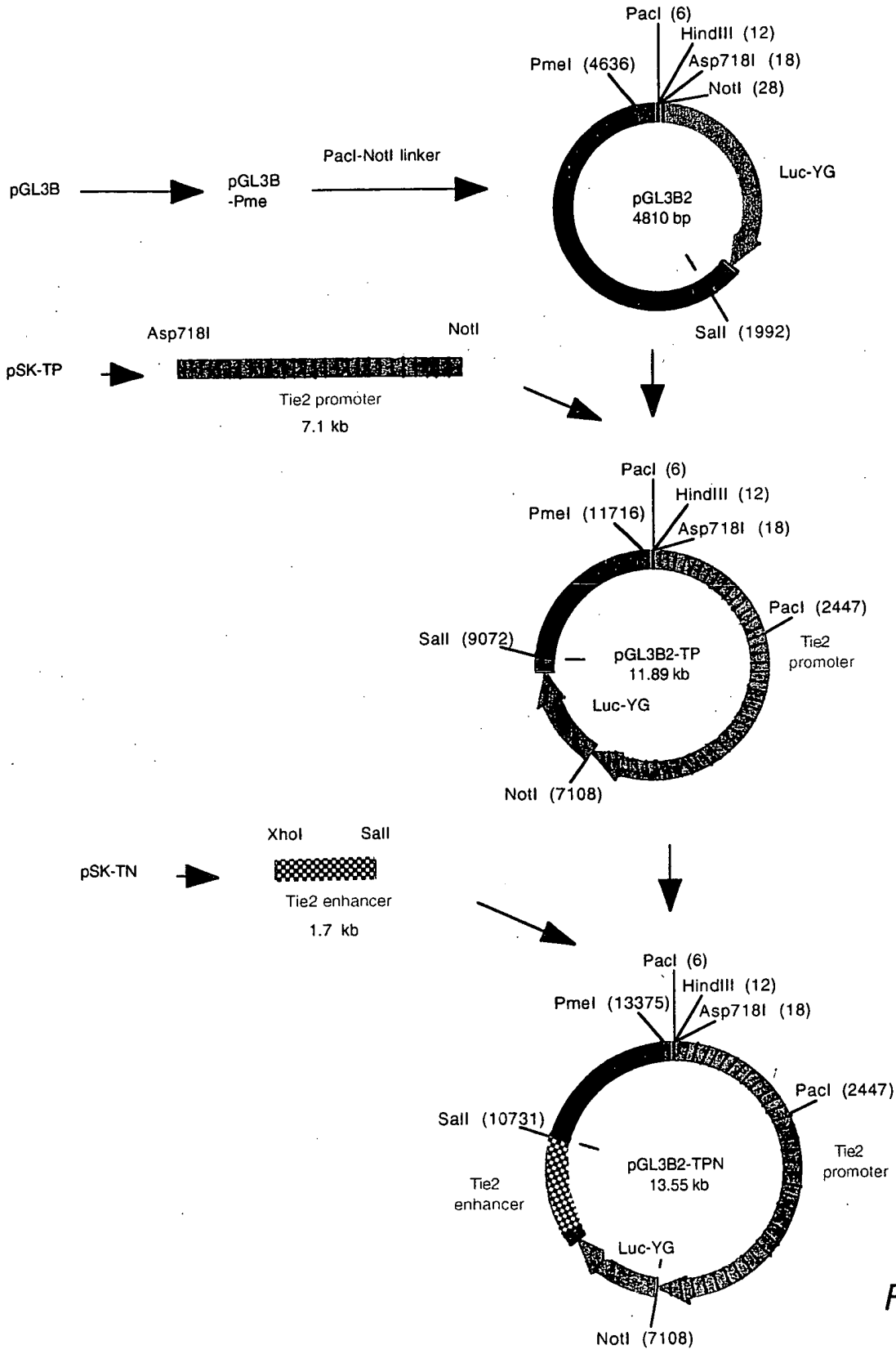

FIG. 17

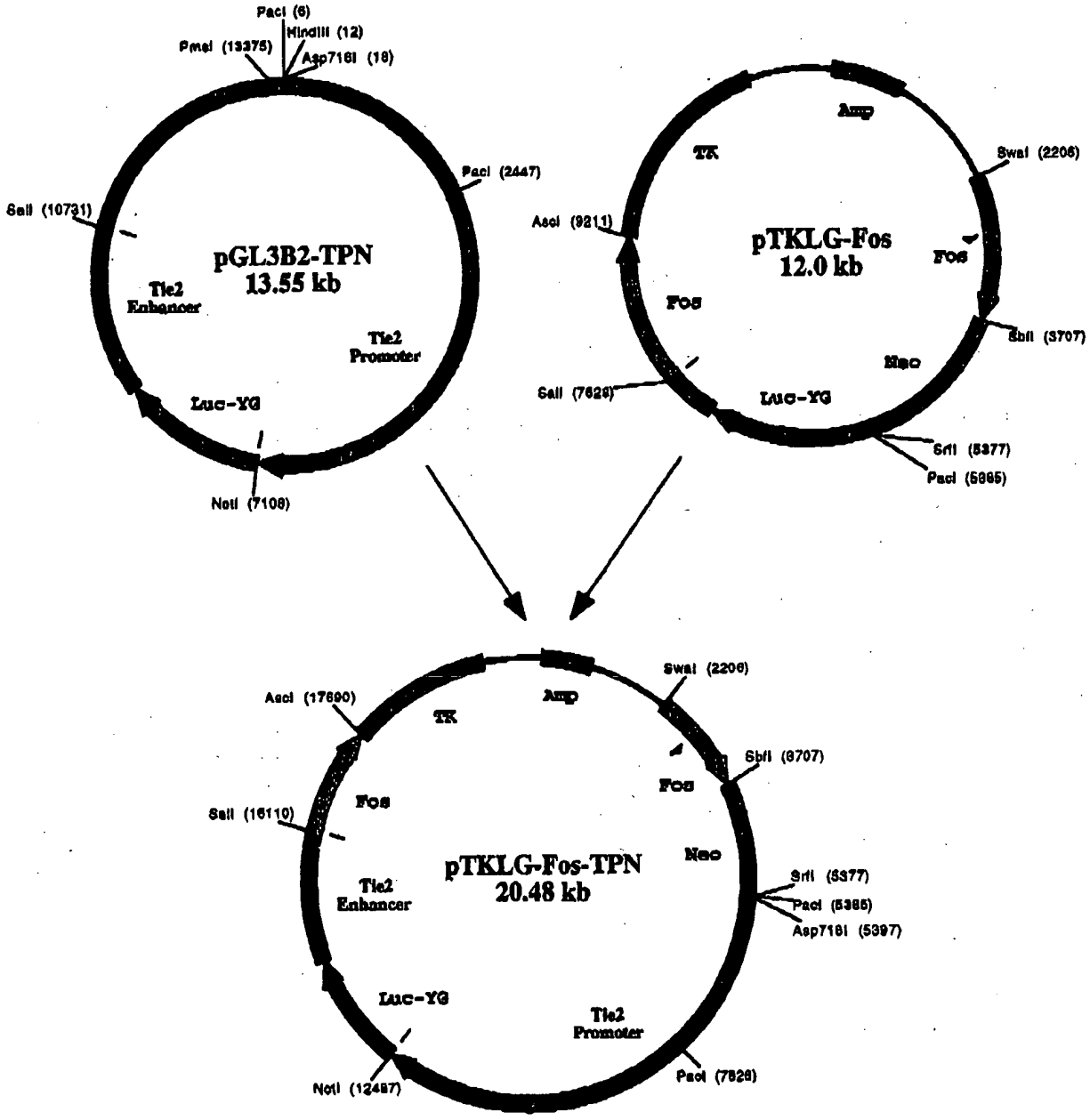

FIG. 18

Targeting Tie2 promoter-yellow green luciferase transgene cassette to FosB chromosomal locus

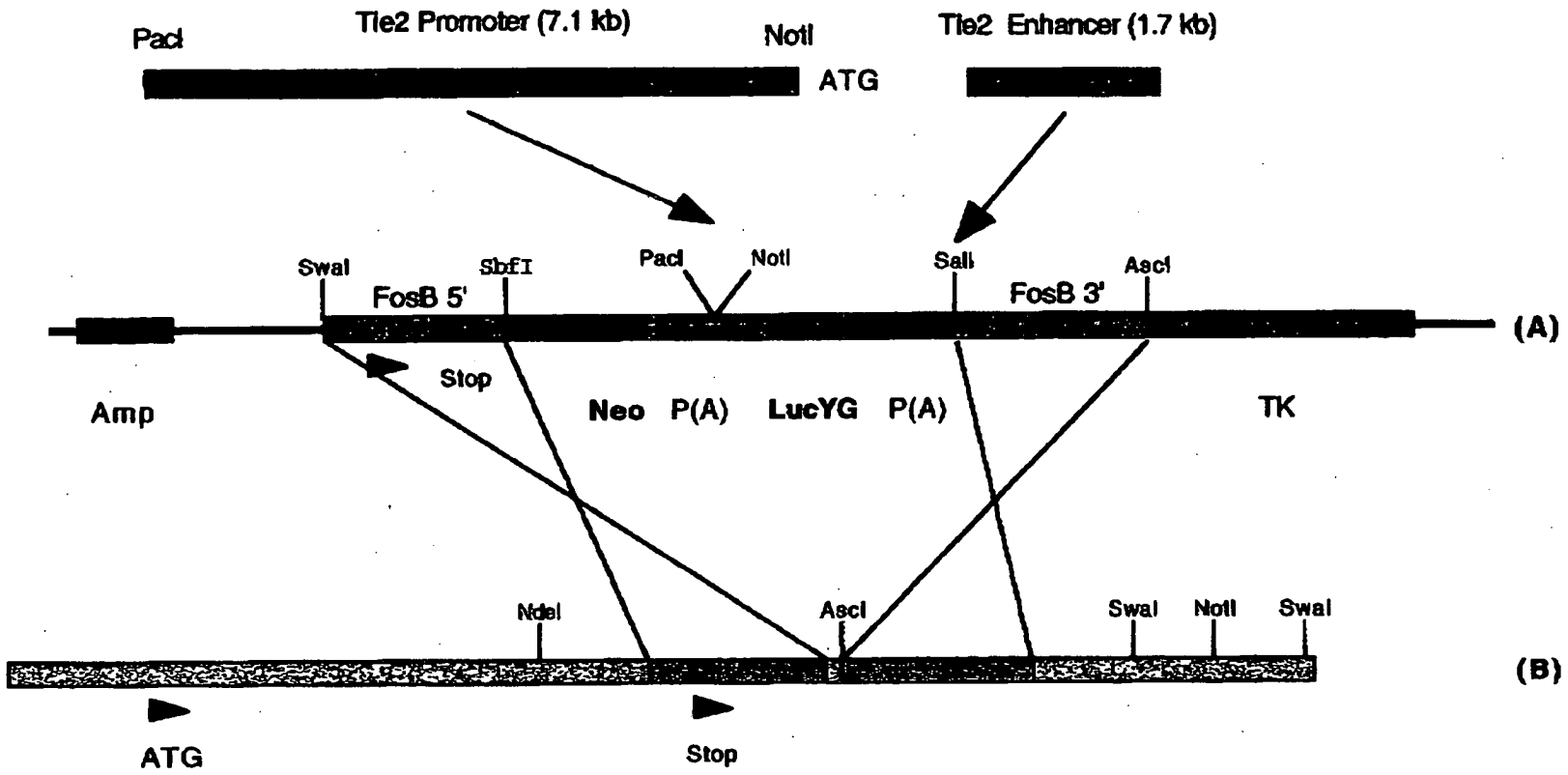

FIG. 19

A. Targeting vector pTKLG-Fos
B. Mouse FosB gene

Neo: Neomycin; TK: thymidine kinase; LucYG: yellow green luciferase from pGL3B (promega). Regions bearing FosB gene translational start and stop codons are indicated with arrows. The Tie2 will be cloned into the polylinkers between Neo and LucYG. Upon homologous recombination, the Neo-Tie2-LucYG transgene will be inserted into the FosB gene.

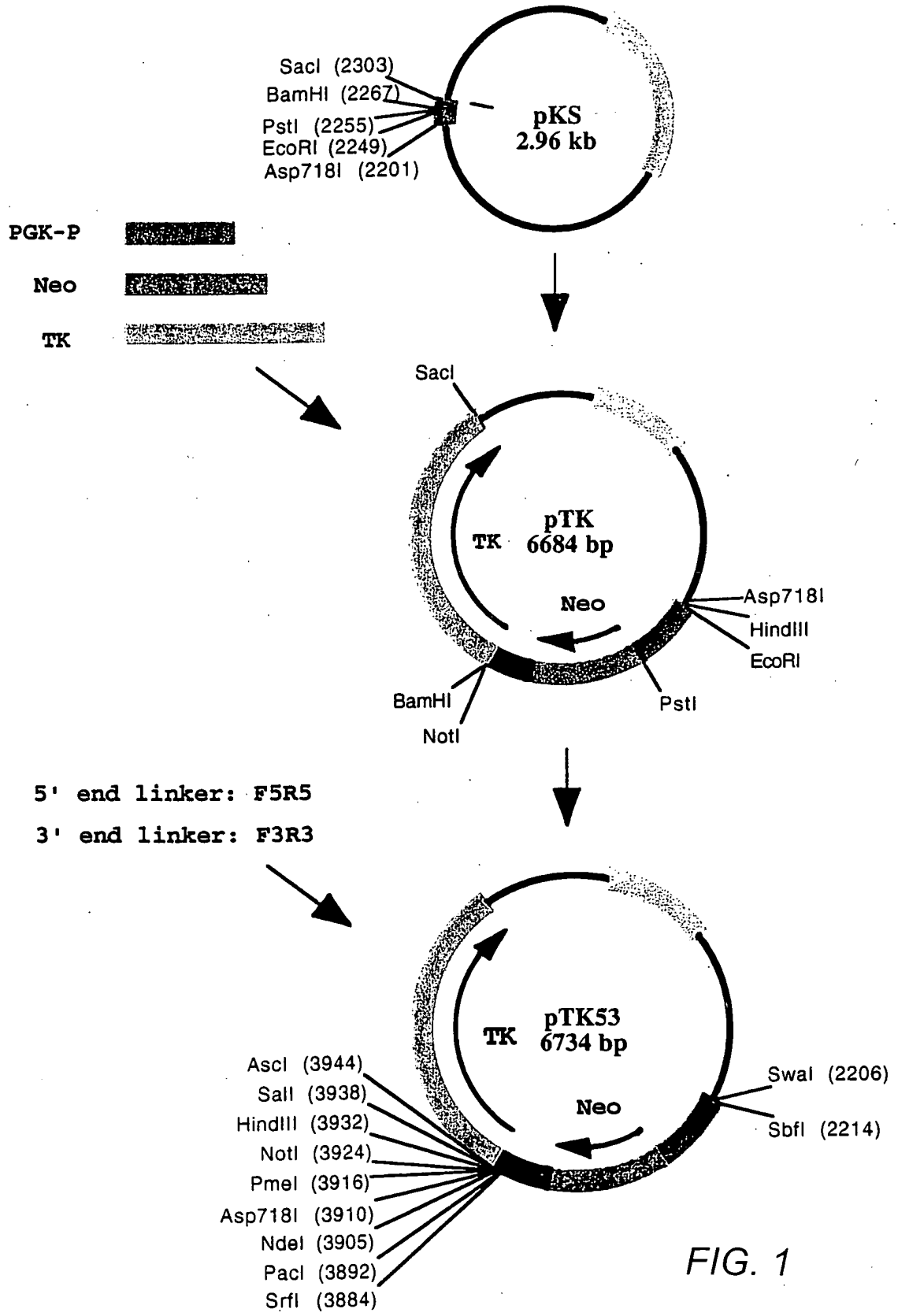

FIG. 1

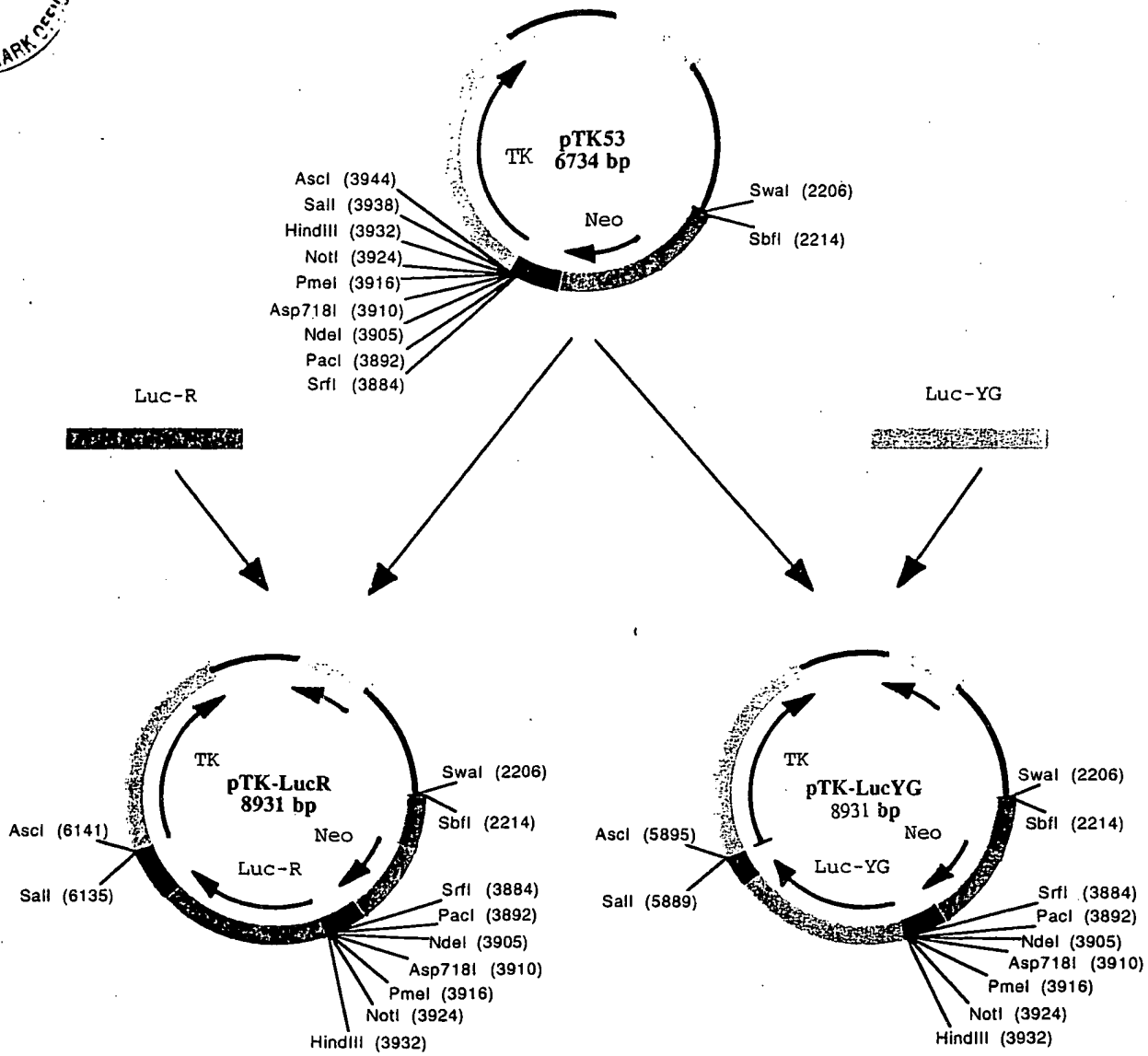

FIG. 2

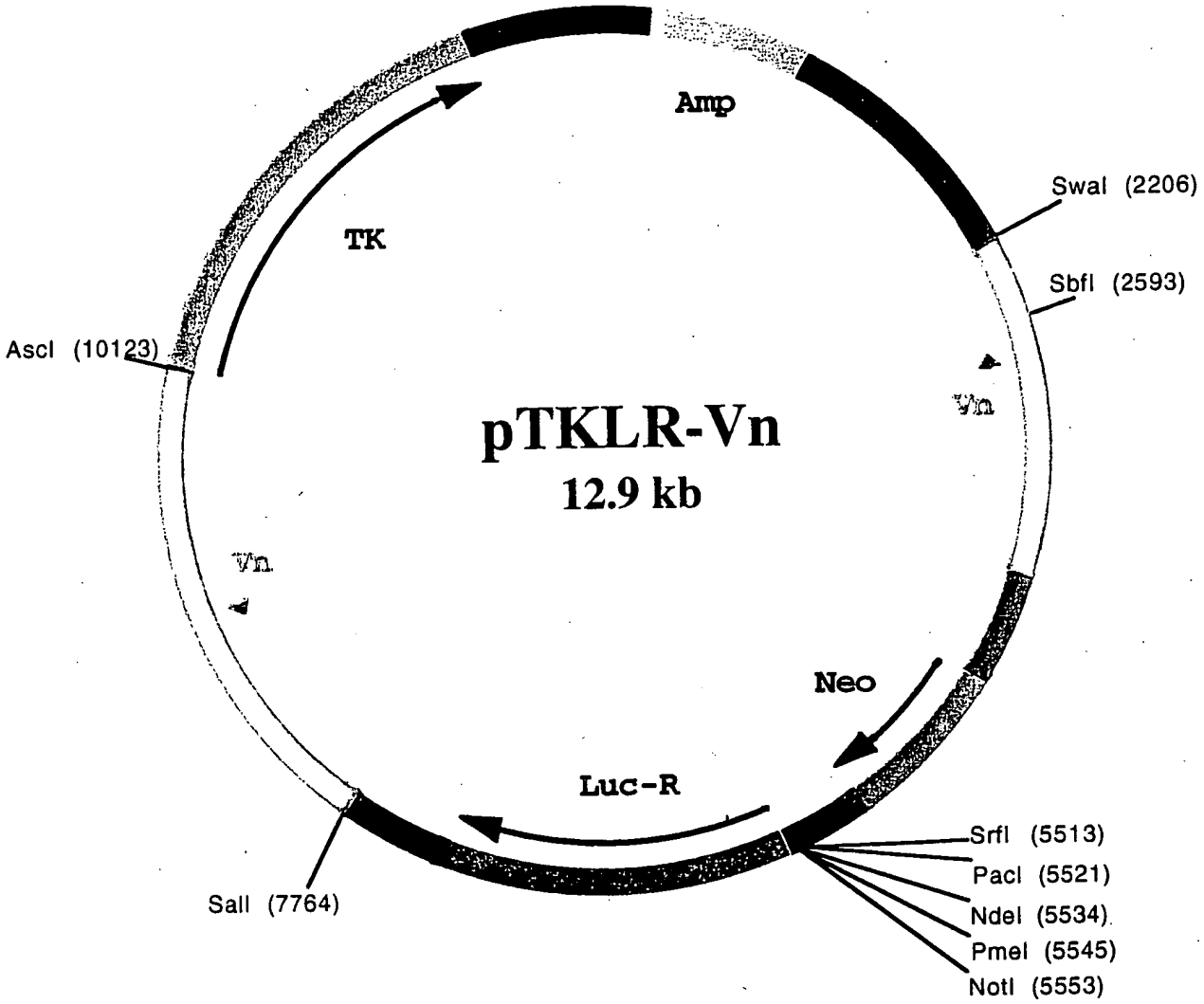

FIG. 3A

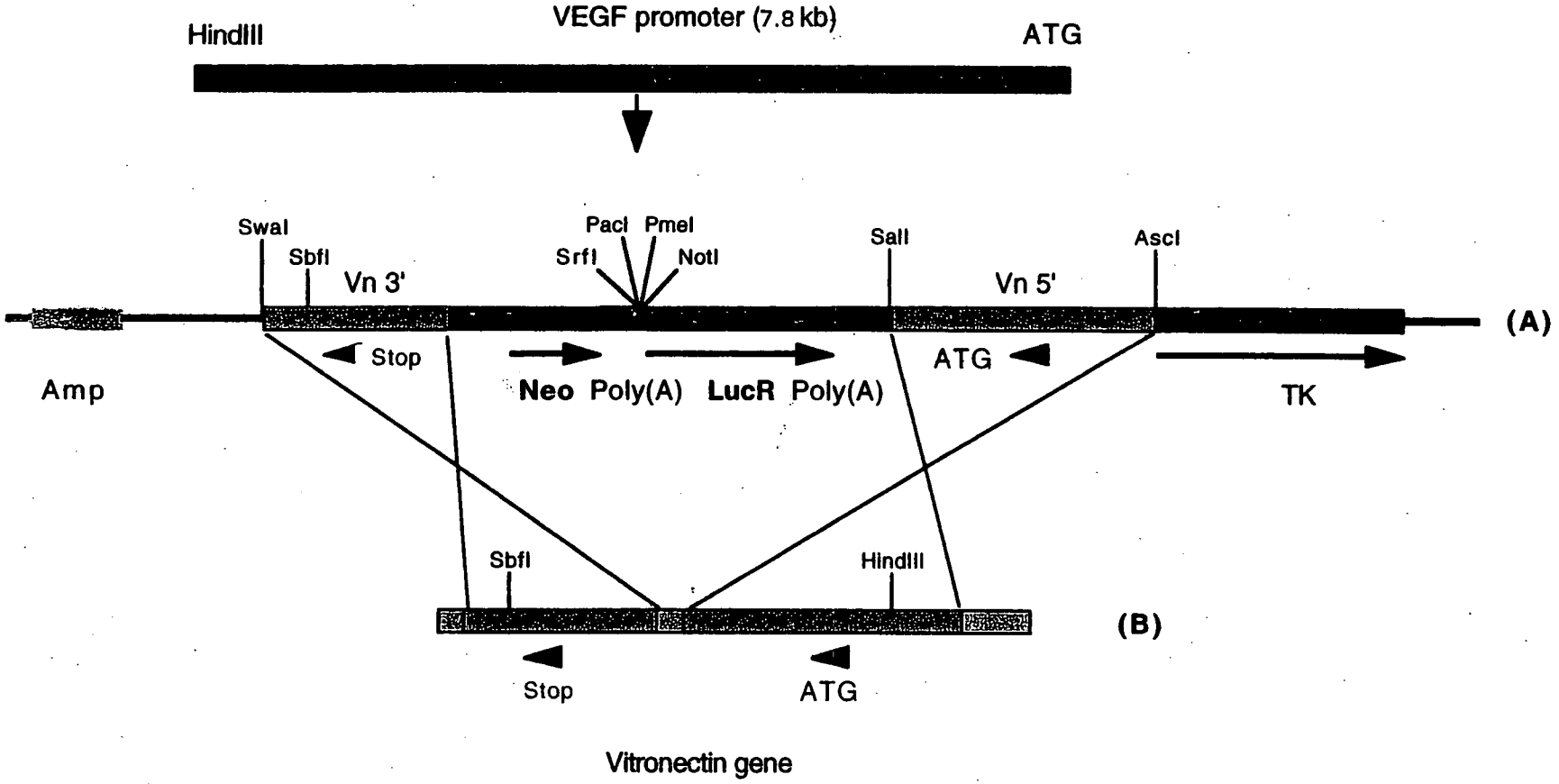

FIG. 3B

```
1   TCCACCCACC TGTTTCTCAC GTCCCCGGCC TTCCTAGTTA ACTTCATGGT TAAAGAAGCC TCACCCGGGG AGGGTGTGGT GCCACAGAAG GAAGGGTGCT
    AGGTGGGTGG ACAAAGAGTG CAGGGGCCGG AAGGATCAAT TGAAGTACCA ATTTCTTCGG AGTGGGCCCC TCCCACACCA CGGTGTCTTC CTTCCCACGA

101 CCCACAAGCC CCCAGTGTCT CTGATTTAGG GAGAGCACCT GAGCCCAGTG AGAGTCTTCT CTGTCCCTCA ATCGGTTCTG AAATTCCCCA CTTGCCCTCC
    GGGTGTTCGG GGGTCACAGA GACTAAATCC CTCTCGTGGA CTCGGGTCAC TCTCAGAAGA GACAGGGAGT TAGCCAAGAC TTTAAGGGGT GAACGGGAGG

201 TTATCCAGGG GACAGGGCTG CCCACCCTAT TCAGGACAGT AGTCTTAAAC TCGTAGCCAA CAGACTTTTT ATTGGGCTGG GAGAAAGAGA TGAGGCTCCT
    AATAGGTCCC CTGTCCCGAC GGGTGGGATA AGTCCTGTCA TCAGAATTTG AGCATCGGTT GTCTGAAAAA TAACCCGACC CTCTTTCTCT ACTCCGAGGA

301 GAAGCTCAGC CGAGTGGGCT CTGATTCCTA CTTCTCAGAG GTCGGGCAGC CCAGCCAATA CTGAGCAATG GAGCGTGGGT AGGGAGGATT CACAGAGTCC
    CTTCGAGTCG GCTCACCCGA GACTAAGGAT GAAGAGTCTC CAGCCCGTCG GGTCGGTTAT GACTCGTTAC CTCGCACCCA TCCCTCCTAA GTGTCTCAGG

401 ACTCGCCGGG TTCTAAGGTT GACTCGGTAG TATTTGTCTG AAAGAAAGAA TGGAAAAAGG GTTATGTGAG ATTCTGCCTG ATCCTGTCCA CTGGTCCCAA
    TGAGCGGCCC AAGATTCCAA CTGAGCCATC ATAAACAGAC TTTCTTTCTT ACCTTTTTCC CAATACACTC TAAGACGGAC TAGGACAGGT GACCAGGGTT

501 GAAGGATAAA GGCTTTTTCT CAGAAGGGAA AGTGAACATC CACCAAGCAG ATAATGTCAC CATCTACAGG CTGTGTTCAG CACCCAGGGA CCAAGACCTG
    CTTCCTATTT CCGAAAAAGA GTCTTCCCTT TCACTTGTAG GTGGTTCGTC TATTACAGTG GTAGATGTCC GACACAAGTC GTGGGTCCCT GGTTCTGGAC

601 CAGGCAAGGC CTAGCCAAAA CCAGTCTAAG GAGTAGAAAG GGGCTCCCAC CTCCAGAGAA GAAATAGACG CTCTGAATGG GCTCGCAGGT GGCAGGTACA
    GTCCGTTCCG GATCGGTTTT GGTCAGATTC CTCATCTTTC CCCGAGGGTG GAGGTCTCTT CTTTATCTGC GAGACTTACC CGAGCGTCCA CCGTCCATGT

701 AGCCAGTCCA TATCATAATC ATAGTTGTTG TAGGTTCCTA GCCCACTCTC CTCGCTGGAG AACAAAGAGA ACCAGATTGA ACGTGATGAA CGACGGGAGT
    TCGGTCAGGT ATAGTATTAG TATCAACAAC ATCCAAGGAT CGGGTGAGAG GAGCGACCTC TTGTTTCTCT TGGTCTAACT TGCACTACTT GCTGCCCTCA

801 TCGAGCTCTG GCTGCGTCTG TGGCCACGCC CTCGGCGTGA ACGATAGCGC TTTCGGCTTC TACGCTTAGA CTTCTGTTTT TTGGCTTGGG CAGAGTGGGA
    AGCTCGAGAC CGACGCAGAC ACCGGTGCGG GAGCCGCACT TGCTATCGCG AAAGCCGAAG ATGCGAATCT GAAGACAAAA AACCGAACCC GTCTCACCCT

901 TAAGGAGCCA GTGACGTAGA TGCGGCCGGC CATAGCAGCG TCCACTTTCC CTGGCACACC ATGCCAGTTC CGGCTGATGA ATTGGGGTTC TCTGGCTCCA
    ATTCCTCGGT CACTGCATCT ACGCCGGCCG GTATCGTCGC AGGTGAAAGG GACCGTGTGG TACGGTCAAG GCCGACTACT TAACCCCAAG AGACCGAGGT
```

FIG. 3C-1

1001 TCTGTAACAG GGAAGGGGTT AATGCACTTG GCAGATTCTG GCTTTGATTT CTCCAGCAAG GTTGTCTGTC TATCTATTTA TCTATCTTTA TCTATGTATC
AGACATTGTC CCTTCCCCAA TTACGTGAAC CGTCTAAGAC CGAAACTAAA GAGGTCGTTC CAACAGACAG ATAGATAAAT AGATAGAAAT AGATACATAG

1101 TATCTATATA TCTATGTATC TATCTATCTA TCATCTACCT ACCTACTTAC CTATCTATGT ATCTATCTAT CTATCATCTA CCTACCTACT TACCTATCTA
ATAGATATAT AGATACATAG ATAGATAGAT AGTAGATGGA TGGATGAATG GATAGATACA TAGATAGATA GATAGTAGAT GGATGGATGA ATGGATAGAT

1201 CCTATTTATT TGTTTGTTTG TTTTCTTTGA AACAGGATCT TAGCACCTAC CTATGGCTGG TTTGCAACTC ACTATGAAGC CATAACTGGC CTCTTAACTC
GGATAAATAA ACAAACAAAC AAAAGAAACT TTGTCCTAGA ATCGTGGATG GATACCGACC AAACGTTGAG TGATACTTCG GTATTGACCG GAGAATTGAG

1301 ACAAAGATCC ACTTGCCTGT GTCTCTGAGT GCTGGGATTA AAAGCATGTG CCACTACACC CAGCTCCAGT AGGACCTTTA GAACACATTT GCTATGCCTT
TGTTTCTAGG TGAACGGACA CAGAGACTCA CGACCCTAAT TTTCGTACAC GGTGATGTGG GTCGAGGTCA TCCTGGAAAT CTTGTGTAAA CGATACGGAA

1401 GCCTAAGACA CACAACTCAG TCCCCAGGCC CCAGCCTCCC TGTCTAGAGC TTTTTCCCAT CCTCTCTCCA CTGTATCCCT TGAATCTCTG CCCCATCCGA
CGGATTCTGT GTGTTGAGTC AGGGGTCCGG GGTCGGAGGG ACAGATCTCG AAAAAGGGTA GGAGAGAGGT GACATAGGGA ACTTAGAGAC GGGGTAGGCT

1501 AACCCCTCAG CGCGCAGCCC CTCCTTCTGC TGTGTTAGGC AAAGTCCAAG GTATGGGATC CAAATAGAGC CAAGCCTCAT CCCCCAAAAG TCAACAGAAG
TTGGGGAGTC GCGCGTCGGG GAGGAAGACG ACACAATCCG TTTCAGGTTC CATACCCTAG GTTTATCTCG GTTCGGAGTA GGGGGTTTTC AGTTGTCTTC

1601 CAAAGTCTAG CCAGAGCAAA CAGCTCTTGA TCGATGGTGT CACAGTTCCA GGCCCCTCCC CTGGAAGCCC CCACTATCAC AGCCCAGTTT CCAGAGAAAG
GTTTCAGATC GGTCTCGTTT GTCGAGAACT AGCTACCACA GTGTCAAGGT CCGGGGAGGG GACCTTCGGG GGTGATAGTG TCGGGTCAAA GGTCTCTTTC

1701 AAGCCAGCCT TGCTCTCCCT CCATACCAGA GGATCTGCCC CAGAAGAGGA GTTCGAAAAT GTTCTCCCAG CTGTCCCGCT GAAGCAAGGC AAAGTGCTCA
TTCGGTCGGA ACGAGAGGGA GGTATGGTCT CCTAGACGGG GTCTTCTCCT CAAGCTTTTA CAAGAGGGTC GACAGGGCGA CTTCGTTCCG TTTCACGAGT

1801 AACACGGCTG ACAGAGAGCT GCCTTCGCAC TCCTCCTGGC TGGGTTGCTG CTGAAATTCG TACTCCCAGT ACTGCTTCCC TGAGGAGCAG AACAGCTGGC
TTGTGCCGAC TGTCTCTCGA CGGAAGCGTG AGGAGGACCG ACCCAACGAC GACTTTAAGC ATGAGGGTCA TGACGAAGGG ACTCCTCGTC TTGTCGACCG

1901 ATCAGGAGAG ATCTGACCAA GGCAGAGAGG AATCATGGAA TAGAACAGGG ACTCCACCAC CTGCCCCCTT CTCCTCCACC CTGAGTACCC TTGAAGAAGT
TAGTCCTCTC TAGACTGGTT CCGTCTCTCC TTAGTACCTT ATCTTGTCCC TGAGGTGGTG GACGGGGGAA GAGGAGGTGG GACTCATGGG AACTTCTTCA

FIG. 3C-2

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2001 AGACCCTTTC CCGGCCACTG TAACGGTGGG CAGGAAGGGC GAACGCTGCA TCAACATTGT CTGGTATGCC ACTGAAGCCT TCGGAGATGT TTCGGGGATA
     TCTGGGAAAG GGCCGGTGAC ATTGCCACCC GTCCTTCCCG CTTGCGACGT AGTTGTAACA GACCATACGG TGACTTCGGA AGCCTCTACA AAGCCCCTAT

2101 ACCAGGGTCC AGGACCCCAT CCTCAAAGCG CCAGTACTGA CTACCCTGAA AGACAGAGAT CAGAAGGGTG AGGACATACC GCTGGCCACA GAAGCAGTCC
     TGGTCCCAGG TCCTGGGGTA GGAGTTTCGC GGTCATGACT GATGGGACTT TCTGTCTCTA GTCTTCCCAC TCCTGTATGG CGACCGGTGT CTTCGTCAGG

2201 TATATCCTAA ACTGGCTGTC ACCTGCTCCT GGAGTCCCTG ACTGCTTTGT CTTCACAGCT CCCCAGCACG TCCATGGCAC CCTTTACCTT GCCTCAGACT
     ATATAGGATT TGACCGACAG TGGACGAGGA CCTCAGGGAC TGACGAAACA GAAGTGTCGA GGGGTCGTGC AGGTACCGTG GGAAATGGAA CGGAGTCTGA

2301 TAGGTCTGGT ACCTTGAACA AGTAGGTCTT CCCCTGACAG TTGATGCGAG TGAAGGCAGC ATCGATGGGG CCCTCAATGC CCCAGACATC TTGGATAAGT
     ATCCAGACCA TGGAACTTGT TCATCCAGAA GGGGACTGTC AACTACGCTC ACTTCCGTCG TAGCTACCCC GGGAGTTACG GGGTCTGTAG AACCTATTCA

2401 TTGGGGTACC CAGGCCTCAC TGCCGTCTCA TCTAGCTCAT AGCAGTACTG CCCTAGAACA GGGGAAACTG TGTGAGAAGC AGATGAGCCT AAGGCAGATC
     AACCCCATGG GTCCGGAGTG ACGGCAGAGT AGATCGAGTA TCGTCATGAC GGGATCTTGT CCCCTTTGAC ACACTCTTCG TCTACTCGGA TTCCGTCTAG

2501 CGACCGCCAC CAGACCTGTC CATAGAGTCA CCTCGGAAGG CAAAGAGGGA CCCATTCTTG AGATCCGTGA AGGCGTCAAA GGGCTTTCCA CTGCACAGTT
     GCTGGCGGTG GTCTGGACAG GTATCTCAGT GGAGCCTTCC GTTTCTCCCT GGGTAAGAAC TCTAGGCACT TCCGCAGTTT CCCGAAAGGT GACGTGTCAA

2601 CTTCCTCTGG AAACTCAGGG GTCCCTTGAT CAGTGGTGTC GGGCCTTAGG ATCTCCTCCT GTTGCTCCAC TTTAGGCGCT GGGGTGCTTG GCTGTTCCTC
     GAAGGAGACC TTTGAGTCCC CAGGGAACTA GTCACCACAG CCCGGAATCC TAGAGGAGGA CAACGAGGTG AAATCCGCGA CCCCACGAAC CGACAAGGAG

2701 AGGATCTAGG AAGGCTGTCG GCTTTAGAGT GCCGTCCGTC CGAGGATTTA GGTCACCGGG TGGAGAGGTG TTCTCGGGTT GCACACCGGT GTTGGTATTG
     TCCTAGATCC TTCCGACAGC CGAAATCTCA CGGCAGGCAG GCTCCTAAAT CCAGTGGCCC ACCTCTCCAC AAGAGCCCAA CGTGTGGCCA CAACCATAAC

2801 TTCTTGGGCT CCTCCACGTA GTCATAGCTC CAATAATCAT CCTCTGGCAT AGTGAACACG TCCCCCCGCG TTACTGCAGG CAGAACGGGG AGCAGTGAGT
     AAGAACCCGA GGAGGTGCAT CAGTATCGAG GTTATTAGTA GGAGACCGTA TCACTTGTGC AGGGGGGCGC AATGACGTCC GTCTTGCCCC TCGTCACTCA

2901 GTCAGGCTGT GGAGGGAGCC CCAGGCCCAC CCACCAGGGC TCTGAACTCA CCTTGGGGCT TGCACTGCTC CATGTAGTCG GCACAGCAGC TCTGATAGTA
     CAGTCCGACA CCTCCCTCGG GGTCCGGGTG GGTGGTCCCG AGACTTGAGT GGAACCCCGA ACGTGACGAG GTACATCAGC CGTGTCGTCG AGACTATCAT
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FIG. 3C-3

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3001 AGTGCAAAGC TCGTCACACT GACACTTCTT GCTGGCCATG AAACCCTGAG TGCAGCGGCC CTTGCATGAC TCTATGGGAG GGAATATGAG GTTTACAGCC
     TCACGTTTCG AGCAGTGTGA CTGTGAAGAA CGACCGGTAC TTTGGGACTC ACGTCGCCGG GAACGTACTG AGATACCCTC CCTTATAGTC CAAATGTCGG

3101 CAATCTAGGG CACCTGCCCA ACCTGCACTT CCCTAGGTAC CCACCAATCC CCTCCCACAC CTTGGTCAGC CAGAGAAACC CATGCCACCA GGGCTAGTAT
     GTTAGATCCC GTGGACGGGT TGGACGTGAA GGGATCCATG GGTGGTTAGG GGAGGGTGTG GAACCAGTCG GTCTCTTTGG GTACGGTGGT CCCGATCATA

3201 GAAAAAGGGC CTCAGGGGTG CCATGGCAGG CCTCTAGCCC AGGGCCTTGG CAAGCTGGGC GCGGAGCTTC TGGAATCTCG CTGTCCTGCC TGAAAAAAGA
     CTTTTTCCCG GAGTCCCCAC GGTACCGTCC GGAGATCGGG TCCCGGAACC GTTCGACCCG CGCCTCGAAG ACCTTAGAGC GACAGGACGG ACTTTTTTCT

3301 AGCAGACTGA AGAAGAGTTC CTAGTTCCCT GGGTTTCTGC CCTTTATTTG CTCATCCTCT GGCCCAGCCC CATTGCCCTC CTCCAAACAC AGCTGCAGCA
     TCGTCTGACT TCTTCTCAAG GATCAAGGGA CCCAAAGACG GGAAATAAAC GAGTAGGAGA CCGGGTCGGG GTAACGGGAG GAGGTTTGTG TCGACGTCGT

3401 AAGGGTCACA TTCCCAGAAC CCCAGCCCCA GGAGAGCTGG GAAACAGAAA ACCCTCGCCA AGACCAAAGT CAGTAGGGTC ACGGGCAGGA GGGATAACAC
     TTCCCAGTGT AAGGGTCTTG GGGTCGGGGT CCTCTCGACC CTTTGTCTTT TGGGAGCGGT TCTGGTTTCA GTCATCCCAG TGCCCGTCCT CCCTATTGTG

3501 GCTTAGCTTA GCTGGGGAGG TGGAAAGAAG CATGTGTTGT CACCCTCTGA GCCAGTCCCG TTAATCTCCC TGAGCCTTAC TTTTTATAAA GTGGGACCAT
     CGAATCGAAT CGACCCCTCC ACCTTTCTTC GTACACAACA GTGGGAGACT CGGTCAGGGC AATTAGAGGG ACTCGGAATG AAAAATATTT CACCCTGGTA

3601 GGTGCCTTGC CTCATCAGGT GTTGAGAGAT TCCGTGAGCT AGAACAGACA AAACGTTTCG TGCCTGGAGT AGCTTCCAAC TCATTCCCAT AAGCCGTTAT
     CCACGGAACG GAGTAGTCCA CAACTCTCTA AGGCACTCGA TCTTGTCTGT TTTGCAAAGC ACGGACCTCA TCGAAGGTTG AGTAAGGGTA TTCGGCAATA

3701 CGATTTACTG TTTGATCAGG CTAGGTGCTT GTCCCATCCT ACCCCCCGCT TCGAATCTGG ATTTTTGGGG CAAGAAGGGG GGTTGGGGGA GAGCTGGCAA
     GCTAAATGAC AAACTAGTCC GATCCACGAA CAGGGTAGGA TGGGGGGCGA AGCTTAGACC TAAAAACCCC GTTCTTCCCC CCAACCCCCT CTCGACCGTT

3801 GCACTTTGGG GGAGGTTTTC TTTTCTTCTC ATAAAAGAAC AAAGCTTCAT TTCTGGCCTC TCCTTGTTCT CTCTAAGCTG GGTGTTACAG CATAGGAAGT
     CGTGAAACCC CCTCCAAAAG AAAAGAAGAG TATTTTCTTG TTTCGAAGTA AAGACCGGAG AGGAACAAGA GAGATTCGAC CCACAATGTC GTATCCTTCA

3901 AGTGGGTCAG AGTCTATTCT TCTTTCTTTA TTTTTTTTAG ATTTATTTAT TTTATGTTTT GTGTATAAGT GTCTGCTCAC ATGTGCATCT GTGCACCACA
     TCACCCAGTC TCAGATAAGA AGAAAGAAAT AAAAAAAATC TAAATAAATA AAATACAAAA CACATATTCA CAGACGAGTG TACACGTAGA CACGTGGTGT
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FIG. 3C-4

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4001 TGCATGTCTT GTGTCTATGG AGGTCAGAAG AGGGCTTTGA ATACCCTGGA ACTGGAGTTT TGAACAGTTA TGAGCTGCCG TGTGGATGCT GAGAATCAAA
     ACGTACAGAA CACAGATACC TCCAGTCTTC TCCCGAAACT TATGGGACCT TGACCTCAAA ACTTGTCAAT ACTCGACGGC ACACCTACGA CTCTTAGTTT

4101 CCCAGGTCCT CTGTAAGAAC AAGTACTCTT AAAGGCTGAG CCATCTTTCC AGTCCCAGAG CCCATTCCTG AGGCTTTCAC TAATCCATTG ATCCTCGGGG
     GGGTCCAGGA GACATTCTTG TTCATGAGAA TTTCCGACTC GGTAGAAAGG TCAGGGTCTC GGGTAAGGAC TCCGAAAGTG ATTAGGTAAC TAGGAGCCCC

4201 GACCACCCTG GCCACACCTT CAATGACCTC ATTTATTTTA AAAAAAAAAT GGACTCATTG GGCATACTTT CTAGACTCAC ATACTAAGTG GGATTTCTCT
     CTGGTGGGAC CGGTGTGGAA GTTACTGGAG TAAATAAAAT TTTTTTTTTA CCTGAGTAAC CCGTATGAAA GATCTGAGTG TATGATTCAC CCTAAAGAGA

4301 ATAAAGAAGT GCTCACTGGG GTAGAGTGCC AGGTTTTGGG CCAAATTCCA AGCACTGGCA CACTTCTGAA GCCCCTCCGT TTTCTGTTCT GTAATCACAG
     TATTTCTTCA CGAGTGACCC CATCTCACGG TCCAAAACCC GGTTTAAGGT TCGTGACCGT GTGAAGACTT CGGGGAGGCA AAAGACAAGA CATTAGTGTC

4401 GCGAGCGTGC CTTTGGTGTC TCTTCTCTAT GGACCGCAGT AGTCTCAGCG GCAAAATGAA ACACTAAATT TTACTCCCTA CAGACGCGTG AAGCCTAAGT
     CGCTCGCACG GAAACCACAG AGAAGAGATA CCTGGCGTCA TCAGAGTCGC CGTTTTACTT TGTGATTTAA AATGAGGGAT GTCTGCGCAC TTCGGATTCA

4501 GGAAACCGGC ATTAAAGGGC TTTAAGAATC TCAACTGCGA TTCTTTAACC ATCCGGAGGG GACGTGGATA CATGTAGCCA GCTTGCTTCC ACATTTTGGG
     CCTTTGGCCG TAATTTCCCG AAATTCTTAG AGTTGACGCT AAGAAATTGG TAGGCCTCCC CTGCACCTAT GTACATCGGT CGAACGAAGG TGTAAAACCC

4601 GAGCCGAGCG AGCGGTAGGA AATGGAAGAC AGCTCTTTAC AGCCCTTTCT ACAGCATCTT GCACACCACC AAGGGGAGAC TGGGGAGAGG AGGCGGAGCC
     CTCGGCTCGC TCGCCATCCT TTACCTTCTG TCGAGAAATG TCGGGAAAGA TGTCGTAGAA CGTGTGGTGG TTCCCCTCTG ACCCCTCTCC TCCGCCTCGG

4701 AGGTGTGGGC GTGGCTGGAG ACCTGGGGTA GGCTTGCGCC TGCGTCGGGG GCGGAGCCCG TGAAACCTAG AGGCGGGGCG TCAAATCCTT GACTCTGCTG
     TCCACACCCG CACCGACCTC TGGACCCCAT CCGAACGCGG ACGCAGCCCC CGCCTCGGGC ACTTTGGATC TCCGCCCCGC AGTTTAGGAA CTGAGACGAC

4801 CTCAGAGGCG TGGTTGCTGT TGAGCATCTT AGCTCCGCTG TGCTTAGATT GGAGCAGCGC TTTGTTCCGG GCACCGGCGT CTCTACCCTC CCGCGTCTGG
     GAGTCTCCGC ACCAACGACA ACTCGTAGAA TCGAGGCGAC ACGAATCTAA CCTCGTCGCG AAACAAGGCC CGTGGCCGCA GAGATGGGAG GGCGCAGACC

4901 TCCATGCTTC TCTCTCCCTT CATGCCCTTC CTAAGTCGCT GAGTCCCGGA GCTGCCCTCC TCCTTCTGCT TCTACACTTG TAGCCCAGCA CCTTTACCGG
     AGGTACGAAG AGAGAGGGAA GTACGGGAAG GATTCAGCGA CTCAGGGCCT CGACGGGAGG AGGAAGACGA AGATGTGAAC ATCGGGTCGT GGAAATGGCC
```

FIG. 3C-5

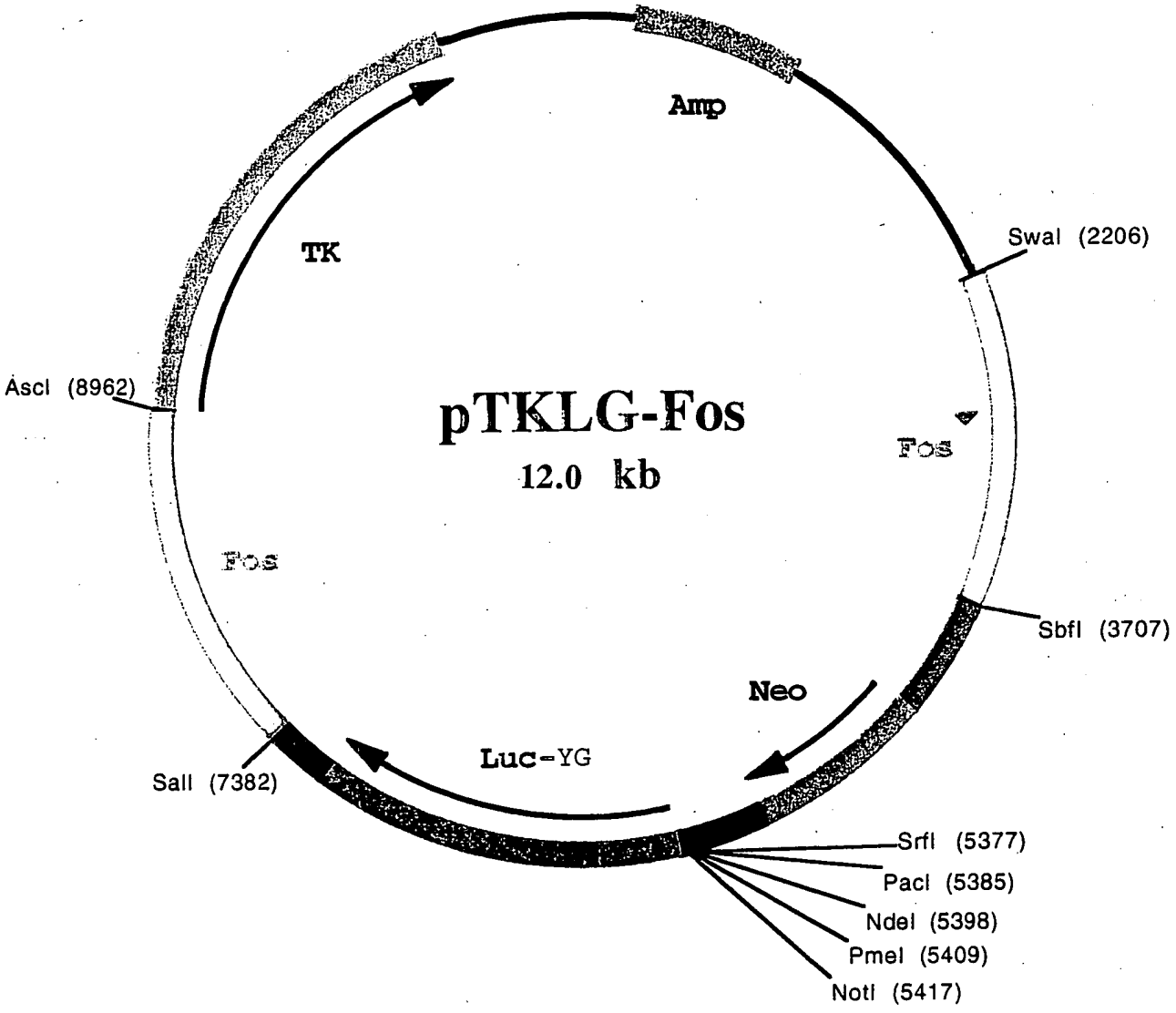

FIG. 4A

FIG. 4B-1

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1001 TGCCTATCAG TTCACTGAAA CCTGTCAGTC TCACTGGGAA GAGACAGACA CTCGGAAGGG ATGCTCTCAA CTCTTAGGCC GGTCCCCCAA CACCGTTGGA
     ACGGATAGTC AAGTGACTTT GGACAGTCAG AGTGACCCTT CTCTGTCTGT GAGCCTTCCC TACGAGAGTT GAGAATCCGG CCAGGGGGTT GTGGCAACCT

1101 ACTGGGATCT CCGCCTGCGG GAGCCCTCAT GCAGTGGGGG GTGTGTTTGT GTGTGAGTGG AGAGGAAGGC TTGGCTAAGG CCTCTCCCTC TCCCTCCCTC
     TGACCCTAGA GGCGGACGCC CTCGGGAGTA CGTCACCCCC CACACAAACA CACACTCACC TCTCCTTCCG AACCGATTCC GGAGAGGGAG AGGGAGGGAG

1201 TGTGGTGGGG GTTGGGGGGT TTTGGCTGTA TGTGTGTGTG AATGTCTGTG GCTCCATCCC GGGAGTTTGT CACCAGGTTC TGTCCAGCCT CCTCTCCCAC
     ACACCACCCC CAACCCCCCA AAACCGACAT ACACACACAC TTACAGACAC CGAGGTAGGG CCCTCAAACA GTGGTCCAAG ACAGGTCGGA GGAGAGGGTG

1301 CCACCCCCCC ACACCTAAGA GTCACCAACC CGGGGTGTGA TTCACCACCC GCTGGAACCG TGCAACCTTT CCCCGAGGAA GAAGGAGGAG GTAGAAGGCA
     GGTGGGGGGG TGTGGATTCT CAGTGGTTGG GCCCCACACT AAGTGGTGGG CGACCTTGGC ACGTTGGAAA GGGGCTCCTT CTTCCTCCTC CATCTTCCGT

1401 GTTGAACAGA ATCTCTCATT AACCACTGCG TCACGGTGTA GTGGAAGGGT GGGTGTTGTG GCTTTTTGCC TGTGACACAC ACATCCACAC CCGCTCACCC
     CAACTTGTCT TAGAGAGTAA TTGGTGACGC AGTGCCACAT CACCTTCCCA CCCACAACAC CGAAAAACGG ACACTGTGTG TGTAGGTGTG GGCGAGTGGG

1501 TGTGCTCACT CACAGGGTCG GTCTCTCTTA TCTCTCTTGG GCGTGTGTGT GTCGGTGGCT TTGTTTGTGT GTCTACGCCT GTGTGTGTAT GTCTCACCCC
     ACACGAGTGA GTGTCCCAGC CAGAGAGAAT AGAGAGAACC CGCACACACA CAGCCACCGA AACAAACACA CAGATGCGGA CACACACATA CAGAGTGGGG

1601 GTAGGAGTGC GCCGGTCTCG GGGAAATGCC CGGCTCCTTC GTGCCAACGG TCACCGCAAT CACAACCAGC CAGGATCTTC AGTGGCTCGT GCAACCCACC
     CATCCTCACG CGGCCAGAGC CCCTTTACGG GCCGAGGAAG CACGGTTGCC AGTGGCGTTA GTGTTGGTCG GTCCTAGAAG TCACCGAGCA CGTTGGGTGG

1701 CTCATCTCTT CCATGGCCCA GTCCCAGGGG CAGCCACTGG CCTCCCAGCC TCCAGCTGTT GACCCTTATG ACATGCCAGG AACCAGCTAC TCAACCCCAG
     GAGTAGAGAA GGTACCGGGT CAGGGTCCCC GTCGGTGACC GGAGGGTCGG AGGTCGACAA CTGGGAATAC TGTACGGTCC TTGGTCGATG AGTTGGGGTC

1801 GCCTGAGTGC CTACAGCACT GGCGGGGCAA GCGGAAGTGG TGGGCCTTCA ACCAGCACAA CCACCAGTGG ACCTGTGTCT GCCCGTCCAG CCAGAGCCAG
     CGGACTCACG GATGTCGTGA CCGCCCCGTT CGCCTTCACC ACCCGGAAGT TGGTCGTGTT GGTGGTCACC TGGACACAGA CGGGCAGGTC GGTCTCGGTC

1901 GCCTAGAAGA CCCCGAGAAG AGACAGTAAG TATGAGGCCT CAGGAGTTGG GATGGAGGAG CCTAGCTAGG GATGTGGGCT CAGTTTGTAC AGTGCCTTGC
     CGGATCTTCT GGGGCTCTTC TCTGTCATTC ATACTCCGGA GTCCTCAACC CTACCTCCTC GGATCGATCC CTACACCCGA GTCAAACATG TCACGGAACG
```

FIG. 4B-2

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2001 TGCCATGCAT GAAGATCCCT AGCACAGCAT AAGCCAGGAG TGGTTATGCA GACCTGTAAC CCCAGCTCTC AGAAGGTGGA GGCAGGAGGA GCAGGAGTTC
     ACGGTACGTA CTTCTAGGGA TCGTGTCGTA TTCGGTCCTC ACCAATACGT CTGGACATTG GGGTCGAGAG TCTTCCACCT CCGTCCTCCT CGTCCTCAAG

2101 GAGGCCAGCC TGTGCTACTT ATGGAGTCCA GCCTGCACTG CAAGAGATCA TTATTTTCAA AAGTTGGCCT TGGGGGGAGG TGGGTGAGGG AAGTAAGAGA
     CTCCGGTCGG ACACGATGAA TACCTCAGGT CGGACGTGAC GTTCTCTAGT AATAAAAGTT TTCAACCGGA ACCCCCCTCC ACCCACTCCC TTCATTCTCT

2201 AAGTGACAGT AATTTTGTCA CTTAATAGTT GGAGGTTCCT CTGAGGCCTC AAGTCTGAAG GAACTTTACC ATTCTGGCCA GTGAGGAGTA GGGGTTATTA
     TTCACTGTCA TTAAAACAGT GAATTATCAA CCTCCAAGGA GACTCCGGAG TTCAGACTTC CTTGAAATGG TAAGACCGGT CACTCCTCAT CCCCAATAAT

2301 TTTGGGGTTC AGGAGGAAGG AAGTTTTCTT AGGGCTGATA GAGGTACCCC CAGATCTCAT GGTCCTTATC TCTGACTCAG CTTACCCCAG AAGAAGAAGA
     AAACCCCAAG TCCTCCTTCC TTCAAAAGAA TCCCGACTAT CTCCATGGGG GTCTAGAGTA CCAGGAATAG AGACTGAGTC GAATGGGGTC TTCTTCTTCT

2401 AAAGCGAAGG GTTCGCAGAG AGCGGAACAA GCTGGCTGCA GCTAAGTGCA GGAACCGTCG GAGGGAGCTG ACAGATCGAC TTCAGGCGGT AAGGAGGAGT
     TTTCGCTTCC CAAGCGTCTC TCGCCTTGTT CGACCGACGT CGATTCACGT CCTTGGCAGC CTCCCTCGAC TGTCTAGCTG AAGTCCGCCA TTCCTCCTCA

2501 CTGGGGGTGT CTTGAGGCCG TGCTGGGAGC ACTCTGCCTT GTTCTTCCCC CGTTTCTCAC TGTGCCTGTG TCCTAAACGA GGAAACCCCC TCTTAGGGAA
     GACCCCCACA GAACTCCGGC ACGACCCTCG TGAGACGGAA CAAGAAGGGG GCAAAGAGTG ACACGGACAC AGGATTTGCT CCTTTGGGGG AGAATCCCTT

2601 CAGGGGTCAG TATAGGCTGA TGGAGTGGCT CCATATGCAT GCTCAGACCC ATGCCCACTT ACTTTCGACT GTTCCCCACT TTCCCTGAAT ATGTCCCCAC
     GTCCCCAGTC ATATCCGACT ACCTCACCGA GGTATACGTA CGAGTCTGGG TACGGGTGAA TGAAAGCTGA CAAGGGGTGA AAGGGACTTA TACAGGGGTG

2701 ATGTCACCCT CCTGGCTTTC TCTCAGCCTA AGGAGACAAG CTAGAGGAGG TAATTCTCTC ACCTTCTTTT CTTCACTAAA TAATAATCCA TTTTGCCTTC
     TACAGTGGGA GGACCGAAAG AGAGTCGGAT TCCTCTGTTC GATCTCCTCC ATTAAGAGAG TGGAAGAAAA GAAGTGATTT ATTATTAGGT AAAACGGAAG

2801 CTGCCTCCAT TTTTTTTTCC TGAGCTGGGG ATCTACCTGT CGTAGTTCAG CCCTCCTCCC CCAACTTGAT AGCCTCAAGT TTCAGCCCTT GGCTGAGATG
     GACGGAGGTA AAAAAAAAGG ACTCGACCCC TAGATGGACA GCATCAAGTC GGGAGGAGGG GGTTGAACTA TCGGAGTTCA AAGTCGGGAA CCGACTCTAC

2901 CCATCATCCT GACTGGCTCT GGCTGGAAAC TATTTTGTGC TAAGTCAATT CCTTGTCTGC TACTTCAGCT ATCTACAGTY CTGCCGAACT TGAGCTGGTG
     GGTAGTAGGA CTGACCGAGA CCGACCTTTG ATAAAACACG ATTCAGTTAA GGAACAGACG ATGAAGTCGA TAGATGTCAR GACGGCTTGA ACTCGACCAC
```

FIG. 4B-3

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3001 GCGCCCACCA AGCCCACTTC TTTCTCTCTT TTTTACCTCA GTGCAACCCC CCACACACAA AACTTCATGC CTGCCCCTTG AAACCAGGGT GCGTCTCTGA
     CGCGGGTGGT TCGGGTGAAG AAAGAGAGAA AAAATGGAGT CACGTTGGGG GGTGTGTGTT TTGAAGTACG GACGGGGAAC TTTGGTCCCA CGCAGAGACT

3101 CTCCCCGTCG GGAGGCTGAA GGAGATGGGT AACAGAACCT CATTAAAAAC AACACATAAG CATTACCTAC TGACTCAACA AACTGTAGTG TTTTTCTTTT
     GAGGGGCAGC CCTCCGACTT CCTCTACCCA TTGTCTTGGA GTAATTTTTG TTGTGTATTC GTAATGGATG ACTGAGTTGT TTGACATCAC AAAAAGAAAA

3201 TTCCTCTCAA AAAATTATTT CGTTTGTTTA TTTATTATTT GCTTATGTTT GAGTGAGTGC TGGTGCACCA CAGCACACAT ACGAGGTCAG AGGGAAATTT
     AAGGAGAGTT TTTTAATAAA GCAAACAAAT AAATAATAAA CGAATACAAA CTCACTCACG ACCACGTGGT GTCGTGTGTA TGCTCCAGTC TCCCTTTAAA

3301 TCATAGTTTG TTCTCTCCTT CCGTGTTGTG GGTGCTTGCT GGCAATCTCC TTCACTCAGT GAGCTACAAT GCCCCCTTCT GCCCTTTAAG GCAGAGTACT
     AGTATCAAAC AAGAGAGGAA GGCACAACAC CCACGAACGA CCGTTAGAGG AAGTGAGTCA CTCGATGTTA CGGGGGAAGA CGGGAAATTC CGTCTCATGA

3401 CCTTAGTACA GGGGGACCCT TTCCTCGGCC TCTCAAAGTT GAGATTACAA ATGTTCACCA TCACACCAGG CTTGGAGTTC TTGCCTATCA GTGACGTCCA
     GGAATCATGT CCCCCTGGGA AAGGAGCCGG AGAGTTTCAA CTCTAATGTT TACAAGTGGT AGTGTGGTCC GAACCTCAAG AACGGATAGT CACTGCAGGT

3501 CTCCTGCCTA GCTTCTTCCC AACCATCTTT TAGTCTGATG GGGAAACCGA GGCACGAGTA GCATGGTCTA CCAGGATTTC CTCTTAGGGG ACGGTCCCCT
     GAGGACGGAT CGAAGAAGGG TTGGTAGAAA ATCAGACTAC CCCTTTGGCT CCGTGCTCAT CGTACCAGAT GGTCCTAAAG GAGAATCCCC TGCCAGGGGA

3601 CAGTTGGGAG GGAGCTGTCC AGCCCCCTGG ATCAGCAGCA AGAATGTATG AGTGTGGGGT TGGGCGGGTG AAGCTACTCT GTGTGGTCGC TGACCAGCAA
     GTCAACCCTC CCTCGACAGG TCGGGGGACC TAGTCGTCGT TCTTACATAC TCACACCCCA ACCCCGCCAC TTCGATGAGA CACACCAGCG ACTGGTCGTT

3701 TTCTCCTTTC TCTGTCTCCT ATGACCTGGC CCTGCTGGGA TCCATTAGGA AACTGATCAG CTTGAAGAGG AAAAGGCAGA GCTGGAGTCG GAGATCGCCG
     AAGAGGAAAG AGACAGAGGA TACTGGACCG GGACGACCCT AGGTAATCCT TTGACTAGTC GAACTTCTCC TTTTCCGTCT CGACCTCAGC CTCTAGCGGC

3801 AGCTGCAAAA AGAGAAGGAA CGCCTGGAGT TTGTCCTGGT GGCCCACAAA CCGGGCTGCA AGATCCCCTA CGAAGAGGGG CCGGGGCCAG GCCCGCTGGC
     TCGACGTTTT TCTCTTCCTT GCGGACCTCA AACAGGACCA CCGGGTGTTT GGCCCGACGT TCTAGGGGAT GCTTCTCCCC GGCCCCGGTC CGGGCGACCG

3901 CGAGGTGAGA GATTTGCCAG GGTCAACATC CGCTAAGGAA GACGGCTTCG GCTGGCTGCT GCCGCCCCCT CCACCACCGC CCCTGCCCTT CCAGAGCAGC
     GCTCCACTCT CTAAACGGTC CCAGTTGTAG GCGATTCCTT CTGCCGAAGC CGACCGACGA CGGCGGGGGA GGTGGTGGCG GGGACGGGAA GGTCTCGTCG
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FIG. 4B-4

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4001 CGAGACGCAC CCCCCAACCT GACGGCTTCT CTCTTTACAC ACAGTGAAGT TCAAGTCCTC GGCGACCCCT TCCCCGTTGT TAGCCCTTCG TACACTTCCT
     GCTCTGCGTG GGGGGTTGGA CTGCCGAAGA GAGAAATGTG TGTCACTTCA AGTTCAGGAG CCGCTGGGGA AGGGGCAACA ATCGGGAAGC ATGTGAAGGA

4101 CGTTTGTCCT CACCTGCCCG GAGGTCTCCG CGTTCGCCGG CGCCCAACGC ACCAGCGGCA GCGAGCAGCC GTCCGACCCG CTGAACTCGC CCTCCCTTCT
     GCAAACAGGA GTGGACGGGC CTCCAGAGGC GCAAGCGGCC GCGGGTTGCG TGGTCGCCGT CGCTCGTCGG CAGGCTGGGC GACTTGAGCG GGAGGGAAGA

4201 TGCTCTGTAA ACTCTTTAGA CAAACAAAAC AAACAAACCC GCAAGGAACA AGGAGGAGGA AGATGAGGAG GAGAGGGGAG GAAGCAGTCC GGGGGTGTGT
     ACGAGACATT TGAGAAATCT GTTTGTTTTG TTTGTTTGGG CGTTCCTTGT TCCTCCTCCT TCTACTCCTC CTCTCCCCTC CTTCGTCAGG CCCCCACACA

4301 GTGTGGACCC TTTGACTCTT CTGTCTGACC ACCTGCCGCC TCTGCCATCG GACATGACGG AAGGACCTCC TTTGTGTTTT GTGCTCTGTC TCTGGTTTTC
     CACACCTGGG AAACTGAGAA GACAGACTGG TGGACGGCGG AGACGGTAGC CTGTACTGCC TTCCTGGAGG AAACACAAAA CACGAGACAG AGACCAAAAG

4401 TGTGCCCCGG CGAGACCGGA GAGCTGGTGA CTTTGGGGAC AGGGGGTGGG GCGGGGATGA ACACCCCTCC TGCATATCTT TGTCCTGTTA CTTCAACCCA
     ACACGGGGCC GCTCTGGCCT CTCGACCACT GAAACCCCTG TCCCCCACCC CGCCCCTACT TGTGGGGAGG ACGTATAGAA ACAGGACAAT GAAGTTGGGT

4501 ACTTCTGGGG ATAGATGGCT GACTGGGTGG GTAGGGTGGG GTGCAACGCC CACCTTTGGC GTCTTACGTG AGGCTGGAGG GGAAAGAGTG CTGAGTGTGG
     TGAAGACCCC TATCTACCGA CTGACCCACC CATCCCACCC CACGTTGCGG GTGGAAACCG CAGAATGCAC TCCGACCTCC CCTTTCTCAC GACTCACACC

4601 GGTGCAGGGT GGGTTGAGGT CGAGCTGGCA TGCACCTCCA GAGAGACCCA ACGAGGAAAT GACAGCACCG TCCTGTCCTT CTTTTCCCCC ACCCACCCAT
     CCACGTCCCA CCCAACTCCA GCTCGACCGT ACGTGGAGGT CTCTCTGGGT TGCTCCTTTA CTGTCGTGGC AGGACAGGAA GAAAAGGGGG TGGGTGGGTA

4701 CCACCCTCAA GGGTGCAGGG TGACCAAGAT AGCTCTGTTT TGCTCCCTCG GGCCTTAGCT GATTAACTTA ACATTTCCAA GAGGTTACAA CCTCCTCCTG
     GGTGGGAGTT CCCACGTCCC ACTGGTTCTA TCGAGACAAA ACGAGGGAGC CCGGAATCGA CTAATTGAAT TGTAAAGGTT CTCCAATGTT GGAGGAGGAC

4801 GACGAATTGA GCCCCCGACT GAGGGAAGTC GATGCCCCCT TTGGGAGTCT GCTAACCCCA CTTCCCGCTG ATTCCAAAAT GTGAACCCCT ATCTGACTGC
     CTGCTTAACT CGGGGGCTGA CTCCCTTCAG CTACGGGGGA AACCCTCAGA CGATTGGGGT GAAGGGCGAC TAAGGTTTTA CACTTGGGGA TAGACTGACG

4901 TCAGTCTTTC CCTCCTGGGA AAACTGGCTC AGGTTGGATT TTTTTCCTCG TCTGCTACAG AGCCCCCTCC CAACTCAGGC CCGCTCCCAC CCCTGTGCAG
     AGTCAGAAAG GGAGGACCCT TTTGACCGAG TCCAACCTAA AAAAAGGAGC AGACGATGTC TCGGGGGAGG GTTGAGTCCG GGCGAGGGTG GGGACACGTC
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FIG. 4B-5

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5001 TATTATGCTA TGTCCCTCTC ACCCTCACCC CCACCCCAGG CGCCCTTGGC CGTCCTCGTT GGGCCTTACT GGTTTTGGGC AGCAGGGGGC GCTGCGACGC
     ATAATACGAT ACAGGGAGAG TGGGAGTGGG GGTGGGGTCC GCGGGAACCG GCAGGAGCAA CCCGGAATGA CCAAAACCCG TCGTCCCCCG CGACGCTGCG

5101 CCATCTTGCT GGAGCGCTTT ATACTGTGAA TGAGTGGTCG GATTGCTGGG CGCGCCGGAT GGGATTGACC CCCAGCCCTC CAAAACTTTT CCTGGGCCTC
     GGTAGAACGA CCTCGCGAAA TATGACACTT ACTCACCAGC CTAACGACCC GCGCGGCCTA CCCTAACTGG GGGTCGGGAG GTTTTGAAAA GGACCCGGAG

5201 CCCTTCTTCC ACTTGCTTCC TCCCTCCCCT TGACAGGGAG TTAGACTCGA AAGGATGACC ACGACGCATC CCGGTGGCCT TCTTGCTCAG GCCCCAGACT
     GGGAAGAAGG TGAACGAAGG AGGGAGGGGA ACTGTCCCTC AATCTGAGCT TTCCTACTGG TGCTGCGTAG GGCCACCGGA AGAACGAGTC CGGGGTCTGA

5301 TTTTCTCTTT AAGTCCTTCG CCTTCCCCAG CCTAGGACGC CAACTTCTCC CCACCCTGGG AGCCCCGCAT CCTCTCACAG AGGTCGAGGC AATTTTCAGA
     AAAAGAGAAA TTCAGGAAGC GGAAGGGGTC GGATCCTGCG GTTGAAGAGG GGTGGGACCC TCGGGGCGTA GGAGAGTGTC TCCAGCTCCG TTAAAAGTCT

5401 GAAGTTTTCA GGGCTGAGGC TTTGGCTCCC CTATCCTCGA TATTTGAATC CCCAAATAGT TTTTGGACTA GCATACTTAA GAGGGGCTG AGTTCCCACT
     CTTCAAAAGT CCCGACTCCG AAACCGAGGG GATAGGAGCT ATAAACTTAG GGGTTTATCA AAAACCTGAT CGTATGAATT CTCCCCCGAC TCAAGGGTGA

5501 ATCCCACTCC ATCCAATTCC TTCAGTCCCA AAGACGAGTT CTGTCCCTTC CCTCCAGCTT TCACCTCGTG AGAATCCCAC GAGTCAGATT TCTATTTTCT
     TAGGGTGAGG TAGGTTAAGG AAGTCAGGGT TTCTGCTCAA GACAGGGAAG GGAGGTCGAA AGTGGAGCAC TCTTAGGGTG CTCAGTCTAA AGATAAAAGA

5601 AATATTGGGG AGATGGGCCC TACCGCCCGT CCCCCGTGCT GCATGGAACA TTCCATACCC TGTCCTGGGC CCTAGGTTCC AAACCTAATC CCAAACCCCA
     TTATAACCCC TCTACCCGGG ATGGCGGGCA GGGGGCACGA CGTACCTTGT AAGGTATGGG ACAGGACCCG GGATCCAAGG TTTGGATTAG GGTTTGGGGT

5701 CCCCCAGCTA TTTATCCCTT TCCTGGTTCC CAAAAAGCAC TTATATCTAT TATGTATAAA TAAATATATT ATATATGAGT GTGCGTGTGT GTGCGTGTGC
     GGGGGTCGAT AAATAGGGAA AGGACCAAGG GTTTTTCGTG AATATAGATA ATACATATTT ATTTATATAA TATATACTCA CACGCACACA CACGCACACG

5801 GTGCGTGCGT GCGTGCGTGC GAGCTTCCTT GTTTTCAAGT GTGCTGTGGA GTTCAAAATC GCTTCTGGGG ATTTGAGTCA GACTTTCTGG CTGTCCCTTT
     CACGCACGCA CGCACGCACG CTCGAAGGAA CAAAAGTTCA CACGACACCT CAAGTTTTAG CGAAGACCCC TAAACTCAGT CTGAAAGACC GACAGGGAAA

5901 TTGTCACTTT TTTGTTGTTG TCTCGGCTCC TCTGGCTGTT GGAGACAGTC CCGGCCTCTC CCTTTATCCT TTCTCAAGTC TGTCTCGCTC AGACCACTTC
     AACAGTGAAA AAACAACAAC AGAGCCGAGG AGACCGACAA CCTCTGTCAG GGCCGGAGAG GGAAATAGGA AAGAGTTCAG ACAGAGCGAG TCTGGTGAAG
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FIG. 4B-6

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6001 CAACATGTCT CCACTCTCAA TGACTCTGAT CTCCGGTCTG TCTGTTAATT CTGGATTTGT CGGGGACATG CAATTTTACT TCTGTAAGTA AGTGTGACTG
     GTTGTACAGA GGTGAGAGTT ACTGAGACTA GAGGCCAGAC AGACAATTAA GACCTAAACA GCCCCTGTAC GTTAAAATGA AGACATTCAT TCACACTGAC

6101 GGTGGTAGAT TTTTTACAAT CTATATCGTT GAGAATTCTG GGTGGAAATG TCTGATCAGG AGAAGGGCCT GCCACTGCCG ACCACAATTC ATTGACTCCA
     CCACCATCTA AAAAATGTTA GATATAGCAA CTCTTAAGAC CCACCTTTAC AGACTAGTCC TCTTCCCGGA CGGTGACGGC TGGTGTTAAG TAACTGAGGT

6201 TAGCCCTCAC CCAGGCTGTA TTTGTGATTT TTTTCATTTT GTTTTTTTGT ATTTTGCACC TGACCCCGGG GGTGCTGGGG CAGTCTATCA CTGGGCAGCT
     ATCGGGAGTG GGTCCGACAT AAACACTAAA AAAAGTAAAA CAAAAAAACA TAAAACGTGG ACTGGGGCCC CCACGACCCC GTCAGATAGT GACCCGTCGA

6301 CCCCTCCCCC CCTTGGTTCT GCACTGTCGC CAATAAAAAG CTTTTAAAAA ACTGTATCCT TCAGGTCAAA GTGTCTGTTT TCCCTGGACA TCTACTACAT
     GGGGAGGGGG GGAACCAAGA CGTGACAGCG GTTATTTTTC GAAAATTTTT TGACATAGGA AGTCCAGTTT CACAGACAAA AGGGACCTGT AGATGATGTA

6401 GGCTTCCTTT CAGAAAAACG GAGTTTGGAT TGCTAGGGAA GTCTTGCTGG CACTTAGTGG GACGCCTAAC GAATCAGAAC CTACAACGGG ACTAAAAGGA
     CCGAAGGAAA GTCTTTTTGC CTCAAACCTA ACGATCCCTT CAGAACGACC GTGAATCACC CTGCGGATTG CTTAGTCTTG GATGTTGCCC TGATTTTCCT

6501 AGTGGAGACT TGCTAGGTTT TCCCATGTTC CCAGGCTGGG CCACCTACTT GAAAAAATAA GGGGCGGAAA AGTGTAAGGT ACCAAATTTG GTGAAGGGTC
     TCACCTCTGA ACGATCCAAA AGGGTACAAG GGTCCGACCC GGTGGATGAA CTTTTTTATT CCCCGCCTTT TCACATTCCA TGGTTTAAAC CACTTCCCAG

6601 TGGGAGAATT TCATGATCGG AAAAGAATTT ATTCACCTTG GGTGTGCAAT GAACTTTCAG CAACAGTTAA GGGCAAGGGT GTAAAAGCTG GGCACAACTT
     ACCCTCTTAA AGTACTAGCC TTTTCTTAAA TAAGTGGAAC CCACACGTTA CTTGAAAGTC GTTGTCAATT CCCGTTCCCA CATTTTCGAC CCGTGTTGAA

6701 GTAAATCCTA GCATTTGAGA GGTGGAGGCA AGGGGATCAA CTGGTGGAGT TCAGTGTCAT GTGGATCGTA GATACCAAGC GCAAAGATCT GCTATGGGGA
     CATTTAGGAT CGTAAACTCT CCACCTCCGT TCCCCTAGTT GACCACCTCA AGTCACAGTA CACCTAGCAT CTATGGTTCG CGTTTCTAGA CGATACCCCT

6801 GAGGGCTTGG TACACCAGGG GAGCCAGAAG TTTCGTGGTG AGGGTAGTGG AGGGCAAGTG GAGAGTGAGA GTTAGCCTCA GGGAGATTCT ACAGGCAATG
     CTCCCGAACC ATGTGGTCCC CTCGGTCTTC AAAGCACCAC TCCCATCACC TCCCGTTCAC CTCTCACTCT CAATCGGAGT CCCTCTAAGA TGTCCGTTAC

6901 ATGCAGAGTT CAGACGCTCC CTTTGAAAGC ACTAGAGAGC CGCAGCAGGT TTTGAGCAGA GAAGGTTAGA GTTAGGTGGT CTCTTCTAGC CCATCCCAGG
     TACGTCTCAA GTCTGCGAGG GAAACTTTCG TGATCTCTCG GCGTCGTCCA AAACTCGTCT CTTCCAATCT CAATCCACCA GAGAAGATCG GGTAGGGTCC
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FIG. 4B-7

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7001 CTGAGGAGGA CGCTGAGGGT TTCAAGAAGG ATCGAGAATG GAAAGCAGAG GAGAAGAAGG ATCCAAGAGG CATGGAGGAG GCAGAACACA TTTCTCTTCT
     GACTCCTCCT GCGACTCCCA AAGTTCTTCC TAGCTCTTAC CTTTCGTCTC CTCTTCTTCC TAGGTTCTCC GTACCTCCTC CGTCTTGTGT AAAGAGAAGA

7101 TTAATAGCAA GCCTGGAAAG GATAACTTGC TGCAGGAGGA GATGCTCACC AGTCGGGTGG TCTAGGGGGT TCTTGGAAAA GAGAAGGCAT TTGCTCAAGC
     AATTATCGTT CGGACCTTTC CTATTGAACG ACGTCCTCCT CTACGAGTGG TCAGCCCACC AGATCCCCCA AGAACCTTTT CTCTTCCGTA AACGAGTTCG

7201 CTCGGTTCCC CCATTCTCGC TCTTCTGTCA GCTTGTCTTC CATTAAGTGT GTGTCTCAAG GCCACCCTGC TCAGGACTCC TTGTGAGACG ACCTTCTATG
     GAGCCAAGGG GGTAAGAGCG AGAAGACAGT CGAACAGAAG GTAATTCACA CACAGAGTTC CGGTGGGACG AGTCCTGAGG AACACTCTGC TGGAAGATAC

7301 CTCGAGTTCA TTAAAAACAC AATTGCCTGG TGCCGTGCTC TCTCCACTGG CTCAGTTACC TCAAAAGACC AGGGCTAAAG GTGTGATCAC AACTCTATCC
     GAGCTCAAGT AATTTTTGTG TTAACGGACC ACGGCACGAG AGAGGTGACC GAGTCAATGG AGTTTTCTGG TCCCGATTTC CACACTAGTG TTGAGATAGG

7401 CCATTACTGC TCCAACGCAG AGACAGGACT GAGCCGGAGT GAACAAATGA ACAAAAATGA CTAATAATGC ATGCGTGATT AAATACATAA AAGAGCAGAT
     GGTAATGACG AGGTTGCGTC TCTGTCCTGA CTCGGCCTCA CTTGTTTACT TGTTTTTACT GATTATTACG TACGCACTAA TTTATGTATT TTCTCGTCTA

7501 GACTGGATGA GCAAATCGTT TAAGGAGAGA CAGCAAGATC CTAGAATTTT GGAGACTAAT TTAAATCCAT CTTTGAGATG CATTTGGTCG GAAATTCCTG
     CTGACCTACT CGTTTAGCAA ATTCCTCTCT GTCGTTCTAG GATCTTAAAA CCTCTGATTA AATTTAGGTA GAAACTCTAC GTAAACCAGC CTTTAAGGAC

7601 GGAGGAAAAA AAGTGTAAAT ATGAAGAGAG AATAAATGAG AATAGGGGTG GCTTCAGAGA GGTTAACTGC GCGCTGGTCG CTTTGTACA AGAATGTGAA
     CCTCCTTTTT TTCACATTTA TACTTCTCTC TTATTTACTC TTATCCCCAC CGAAGTCTCT CCAATTGACG CGCGACCAGC GAAAACATGT TCTTACACTT

7701 TTGCAGGGAG CAAAATGGGA TAGATACTCC CGCCCGAAAG GTGGAATTGA ACCACTCTGT CGCTAAACAG CTACAGGTTT GAAGCCTGCA CCCCAGACCA
     AACGTCCCTC GTTTTACCCT ATCTATGAGG GCGGGCTTTC CACCTTAACT TGGTGAGACA GCGATTTGTC GATGTCCAAA CTTCGGACGT GGGGTCTGGT

7801 CTGAGGATCA TCCGGGCGAA AGGAGCTATT TTCAGTTAGT TATATAAAGG CGAGATACTA CTACTTTTTA CACTTATGGT CATTATTTGT GGTATACAGT
     GACTCCTAGT AGGCCCGCTT TCCTCGATAA AAGTCAATCA ATATATTTCC GCTCTATGAT GATGAAAAAT GTGAATACCA GTAATAAACA CCATATGTCA

7901 AGATAATTAA TTTCAATGGT TTCGAACATT TTTTTTCACT TTTTCTTGTG AACATGTGTT TCCTCAGTAA AGTGTTCCGT GAATGACTCT ACTAACTAAA
     TCTATTAATT AAAGTTACCA AAGCTTGTAA AAAAAAGTGA AAAAGAACAC TTGTACACAA AGGAGTCATT TCACAAGGCA CTTACTGAGA TGATTGATTT
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FIG. 4B-8

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8001 AAGTAAGTAG CTTCATTTGC ATAGCGCCTT GCATTTTGGG AAGCAGCGCC TAAAGTGCCT GTCTCCCTAA CTAAAAGCAG AATTTTTTGC AAAGTGAAAA
     TTCATTCATC GAAGTAAACG TATCGCGGAA CGTAAAACCC TTCGTCGCGG ATTTCACGGA CAGAGGGATT GATTTTCGTC TTAAAAAACG TTTCACTTTT

8101 GTCAGTTTTA TTTTTGTTTG TTTGTTTGCT TGTTTGTTTT TAATGGAAAA ACTTCTCACG CGGCCCATTC GTAGCAGAAT TCGAGATTTT CTGCAAGCGA
     CAGTCAAAAT AAAAACAAAC AAACAAACGA ACAAACAAAA ATTACCTTTT TGAAGAGTGC GCCGGGTAAG CATCGTCTTA AGCTCTAAAA GACGTTCGCT

8201 GAAGCAAGAC TTTCGTAGGG TCTGACGGCA CGCGGCCGCA GAGCGACACC TGCCGTTGCT TTATAGAACT GCAAGTATGT AGGGAATCTA CTGAGTCCCT
     CTTCGTTCTG AAAGCATCCC AGACTGCCGT GCGCCGGCGT CTCGCTGTGG ACGGCAACGA AATATCTTGA CGTTCATACA TCCCTTAGAT GACTCAGGGA

8301 AGGTGATGGA GTTGACAACC AACTCCCCTT GAGTTTAGAC GCTAAAAACC ATCCCTTTTT ATATTTATGT GATTAGCCCA GGGAAACTAA GGCTCAGACA
     TCCACTACCT CAACTGTTGG TTGAGGGGAA CTCAAATCTG CGATTTTTGG TAGGGAAAAA TATAAATACA CTAATCGGGT CCCTTTGATT CCGAGTCTGT

8401 TGGATAATAC CACAGCCGAG TTCTTGTAGC CCAACTCCCT AGGGGAAATG AAACCTACAG TTGTGGTTTT AATATGCTTG GCCCAGGGGC AGTGGCCCTA
     ACCTATTATG GTGTCGGCTC AAGAACATCG GGTTGAGGGA TCCCCTTTAC TTTGGATGTC AACACCAAAA TTATACGAAC CGGGTCCCCG TCACCGGGAT

8501 TTGGCAGGAG TGGCCTTATT AGCGGAGGTG TACCTTGTTA GAGAAGTGTG TCACTTGGAG GCGAGGTTTT GAGGTACGTA TGCTCAAGTC TGGCCAGTGT
     AACCGTCCTC ACCGGAATAA TCGCCTCCAC ATGGAACAAT CTCTTCACAC AGTGAACCTC CGCTCCAAAA CTCCATGCAT ACGAGTTCAG ACCGGTCACA

8601 GATCCTGGCT GTCTGCAGAA CGTGGTCTCC TTCTGGCTGC CTTCGGATCA AGGTGTAGAA CTCTCAGCTC CTTCTCCAGC ACCATGTCTG CCTGCTTAAT
     CTAGGACCGA CAGACGTCTT GCACCAGAGG AAGACCGACG GAAGCCTAGT TCCACATCTT GAGAGTCGAG GAAGAGGTCG TGGTACAGAC GGACGAATTA

8701 GCTTTGCTTC TTTCCATGAC GATAATGAAC TGTGCCTCTG AAACTGTAAG TCAGCCCCCC AGTTACATGT TTTCTTTTAT AAGAGTTGCA TATATATATG
     CGAAACGAAG AAAGGTACTG CTATTACTTG ACACGGAGAC TTTGACATTC AGTCGGGGGG TCAATGTACA AAAGAAAATA TTCTCAACGT ATATATATAC

8801 TATGTATATA TGTATGTATA TATGTATGTA TATATATATA TATATATAAA CAGGGTCTCA CTCTTTAGCT CTGGCTGGCC TGAAATTCAC TATGTAGCCC
     ATACATATAT ACATACATAT ATACATACAT ATATATATAT ATATATATTT GTCCCAGAGT GAGAAATCGA GACCGACCGG ACTTTAAGTG ATACATCGGG

8901 AGGATTGCCT GAACTTTGAA GCAATCTTCC TGCCTCAGCC TCCCAATGGT ATTACAGGCA TGAGTCACAA CAAGCCATTT AAATCTTATG ATGACTTATA
     TCCTAACGGA CTTGAAACTT CGTTAGAAGG ACGGAGTCGG AGGGTTACCA TAATGTCCGT ACTCAGTGTT GTTCGGTAAA TTTAGAATAC TACTGAATAT
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FIG. 4B-9

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9001 AGAAGACAGA AAATCAGAGT TCCTTTACCT AGTTCACAGA TCCCTACAAT CTAACCTCGT TCGCTCCATA AACAGCCCTA CCCCACCCTC CTGGAACTGC
     TCTTCTGTCT TTTAGTCTCA AGGAAATGGA TCAAGTGTCT AGGGATGTTA GATTGGAGCA AGCGAGGTAT TTGTCGGGAT GGGGTGGGAG GACCTTGACG

9101 TTTGAGGAAT GCTGCAGGCT CTCACAGGCA CACTCCTCCT TGGTTAATCT CTTCAGCCTG GTTGCCTTCC CCCCCCATGT CCATGTGGCC CAAAGCCTCT
     AAACTCCTTA CGACGTCCGA GAGTGTCCGT GTGAGGAGGA ACCAATTAGA GAAGTCGGAC CAACGGAAGG GGGGGGTACA GGTACACCGG GTTTCGGAGA

9201 CATCCTGTTC TCAAATACCA CTAGCTAGTA AGGCTCCCCG ACCTGACCCG GTTTAAATAT TAGAAAAGGG TCACTTTCTC CCTGCCACAG ACAACCAAAC
     GTAGGACAAG AGTTTATGGT GATCGATCAT TCCGAGGGGC TGGACTGGGC CAAATTTATA ATCTTTTCCC AGTGAAAGAG GGACGGTGTC TGTTGGTTTG

9301 CACCATATGC TTGTCACTTA CTACCTGACT ATGAAGGTTA ATAGATGTCT TCACAACCTT TCTCTGAGCC TCAGTTTCCC CACCTGCATA ATGCATCTGA
     GTGGTATACG AACAGTGAAT GATGGACTGA TACTTCCAAT TATCTACAGA AGTGTTGGAA AGAGACTCGG AGTCAAAGGG GTGGACGTAT TACGTAGACT

9401 GACACAGAAT TCCCTAGAGC TGTGGTTCTC CTCATTCCTA GTGCTGGGAC CCTTTAATAC ATTTCCTCAT GTTGTGGTGA CCCCACCACC ACCATAAAAT
     CTGTGTCTTA AGGGATCTCG ACACCAAGAG GAGTAAGGAT CACGACCCTG GGAAATTATG TAAAGGAGTA CAACACCACT GGGGTGGTGG TGGTATTTTA

9501 TATTTCCATT GATACTTCAT AACTGTAATT TTTTCTATTG TTATGAATAG TAATGTAAGC ATTTGTGTTT CCCAGTGATC TTAGATGACC CTGTGGAAGA
     ATAAAGGTAA CTATGAAGTA TTGACATTAA AAAAGATAAC AATACTTATC ATTACATTCG TAAACACAAA GGGTCACTAG AATCTACTGG GACACCTTCT

9601 GTCATTCCAC CCCAAAGGGG TCCCCACCAC AAGTTAAGAA TTCCTGCCAT AGAGGAATCA CAGGGACCAT GGATTAACAC TTGGGTCGAC TTTTGGGCTG
     CAGTAAGGTG GGGTTTCCCC AGGGGTGGTG TTCAATTCTT AAGGACGGTA TCTCCTTAGT GTCCCTGGTA CCTAATTGTG AACCCAGCTG AAAACCCGAC

9701 CCTTCTGGGA GGCGCTAGAG CTAATGACAG CTACATCAAT TTCTGAAATT TTGTGTGTGT GTGTGTGTGT GTGTGTGTGT GTGTGTGTGT GCCCTGAGTC
     GGAAGACCCT CCGCGATCTC GATTACTGTC GATGTAGTTA AAGACTTTAA AACACACACA CACACACACA CACACACACA CACACACACA CGGGACTCAG

9801 GGGTGCTGAG ATAGGCCAGT GGCTTTAGTG TTCCTGGACC CATTACTCAC CAGAACTCTC CCCTCACCTG ATTCTTTGAT GTGAACACTA TGTCTTCATA
     CCCACGACTC TATCCGGTCA CCGAAATCAC AAGGACCTGG GTAATGAGTG GTCTTGAGAG GGGAGTGGAC TAAGAAACTA CACTTGTGAT ACAGAAGTAT

9901 GTGGCGGTGG CAATAGCAGC AACAGTGAAC TAAATTTTAA AAGTAGAACT CAGCTGGAGA TACAAATATT GCAGTTTTGA AGTTGGGGTG GATTGTCTAA
     CACCGCCACC GTTATCGTCG TTGTCACTTG ATTTAAAATT TTCATCTTGA GTCGACCTCT ATGTTTATAA CGTCAAAACT TCAACCCCAC CTAACAGATT
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FIG. 4B-10

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10001 TAACTTAATA ACATAACCCA GAAGAGAGGC CCCTTGGTCT TGCAAACTTT ATATGCCTCA GTACAGGGGA ACGCCAGGGC CAAGAAGTGG GAGTGGGTGG
      ATTGAATTAT TGTATTGGGT CTTCTCTCCG GGGAACCAGA ACGTTTGAAA TATACGGAGT CATGTCCCCT TGCGGTCCCG GTTCTTCACC CTCACCCACC

10101 GTAGGGGAGC AGGGTGGGGG GAGGGTATAG GGGACTTTCC GGATAGCATT TGAAATGTAA ATGAAGAAAA TATCTAATAA AAATTTGAAA AAAAATGTTA
      CATCCCCTCG TCCCACCCCC CTCCCATATC CCCTGAAAGG CCTATCGTAA ACTTTACATT TACTTCTTTT ATAGATTATT TTTAAACTTT TTTTTACAAT

10201 CCCCAGTTTG GCCTGGATCT CACTACCTCA ACCAGACTGG CATGTGACTC TGCTGAGATC TGCCTACTTC TGCCTCCTGG GTGCAGAAGA CAATTTTTGG
      GGGGTCAAAC CGGACCTAGA GTGATGGAGT TGGTCTGACC GTACACTGAG ACGACTCTAG ACGGATGAAG ACGGAGGACC CACGTCTTCT GTTAAAAACC

10301 AAGTTAGTTC TCTTCTTCCA TCTTGTGGAT TCCAGGGATT GAACTCGGGT CATCAGGCTT GGCTGCAAGT GACTTACTTA GGTGTCTCCC AGACCCTCTC
      TTCAATCAAG AGAAGAAGGT AGAACACCTA AGGTCCCTAA CTTGAGCCCA GTAGTCCGAA CCGACGTTCA CTGAATGAAT CCACAGAGGG TCTGGGAGAG

10401 GGTTTGATTA GTTAGATGCT GCACTTCATG CCTGACTTTC GCACTATGTA GATAGAGCAA TGTCTATAAC ATCTCCTACA ATGATATGTA TATCAAGAGC
      CCAAACTAAT CAATCTACGA CGTGAAGTAC GGACTGAAAG CGTGATACAT CTATCTCGTT ACAGATATTG TAGAGGATGT TACTATACAT ATAGTTCTCG

10501 CAAGTGATGA GATGGCTCAG TGGGTAAGAG CACAGACTGC TCTTCCAAAG GTCCCGAGTT CAAATCCCAG CAATCACATA GTGGCTTCCA TTCCCTCTTA
      GTTCACTACT CTACCGAGTC ACCCATTCTC GTGTCTGACG AGAAGGTTTC CAGGGCTCAA GTTTAGGGTC GTTAGTGTAT CACCGAAGGT AAGGGAGAAT

10601 TGGAATGTCT GAAGACTGCT ACAGTGTACT TACATATAAT AAATAAATAA ATCTTAAAAA AAAAAAACCC AGCCGGGCGT GGTGGCGCAC GCCTTTAATC
      ACCTTACAGA CTTCTGACGA TGTCACATGA ATGTATATTA TTTATTTATT TAGAATTTTT TTTTTTTGGG TCGGCCCGCA CCACCGCGTG CGGAAATTAG

10701 CCAGCACTTG GGAGGCAGAG GCAGGCGGAT TCCTGAGTTC GACGCCAGCC TGGTCTACAG AGTGAGTTCC ACGACAGCCA GAACTACACA GAGAAACCCT
      GGTCGTGAAC CCTCCGTCTC CGTCCGCCTA AGGACTCAAG CTGCGGTCGG ACCAGATGTC TCACTCAAGG TGCTGTCGGT CTTGATGTGT CTCTTTGGGA

10801 GTCTCGAAAA AAAAAAGAGA GAGAGGGAAG TGAGAGCGCA ATAATCTTAA CATTTCTGTG GTTGTCTTTG CTGTAGTCTA TTCTGATAAG CAATGCTGGC
      CAGAGCTTTT TTTTTTCTCT CTCTCCCTTC ACTCTCGCGT TATTAGAATT GTAAAGACAC CAACAGAAAC GACATCAGAT AAGACTATTC GTTACGACCG

10901 TTGCTCCCAA GGTAGGAAGT AACATTTCTT TATAAAAGGT ATTTGCTCTG CTTTATTTTT CTGTTTTATT TATGGTGCTG AGGATGGAAC CCAGGACCCT
      AACGAGGGTT CCATCCTTCA TTGTAAAGAA ATATTTTCCA TAAACGAGAC GAAATAAAAA GACAAAATAA ATACCACGAC TCCTACCTTG GGTCCTGGGA
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FIG. 4B-11

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11001 TGGCAAGCAA GGCTAGCTGT TTACCACTGA GCCATACTCC AGCCTTGCAC TGGGGGATTC TAGGCAAGGG TTCTACCACT GAGCCACACT CCCCACCCCC
      ACCGTTCGTT CCGATCGACA AATGGTGACT CGGTATGAGG TCGGAACGTG ACCCCCTAAG ATCCGTTCCC AAGATGGTGA CTCGGTGTGA GGGGTGGGGG

11101 ATCCCTCTCT GGAAGATTCT AGGCAGTTCC ATACCTAGCC TTTGATCTTT TAAGACGGTC TTACTAGAGC TCAGTT
      TAGGGAGAGA CCTTCTAAGA TCCGTCAAGG TATGGATCGG AAACTAGAAA ATTCTGCCAG AATGATCTCG AGTCAA
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FIG. 4B-12

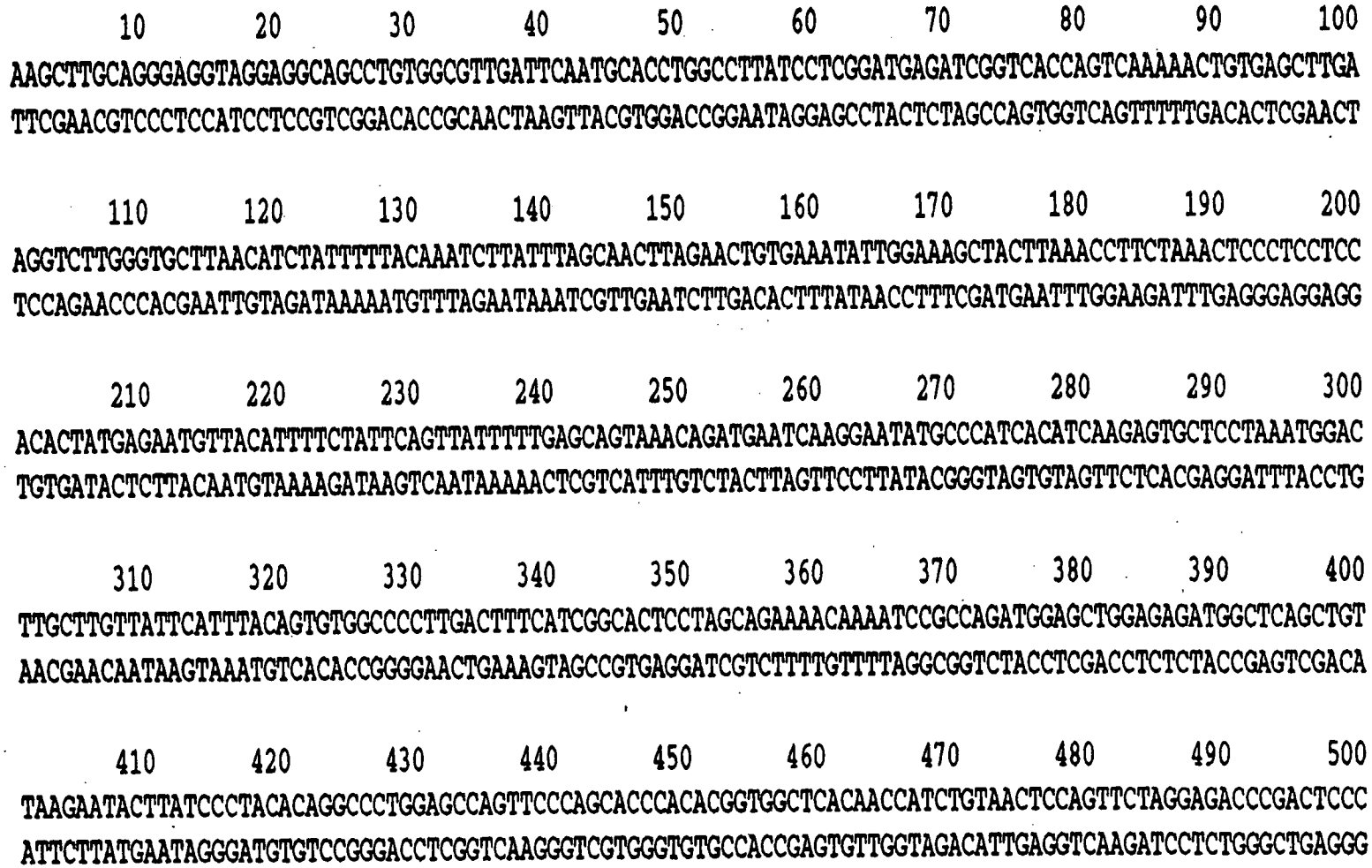

FIG. 5A

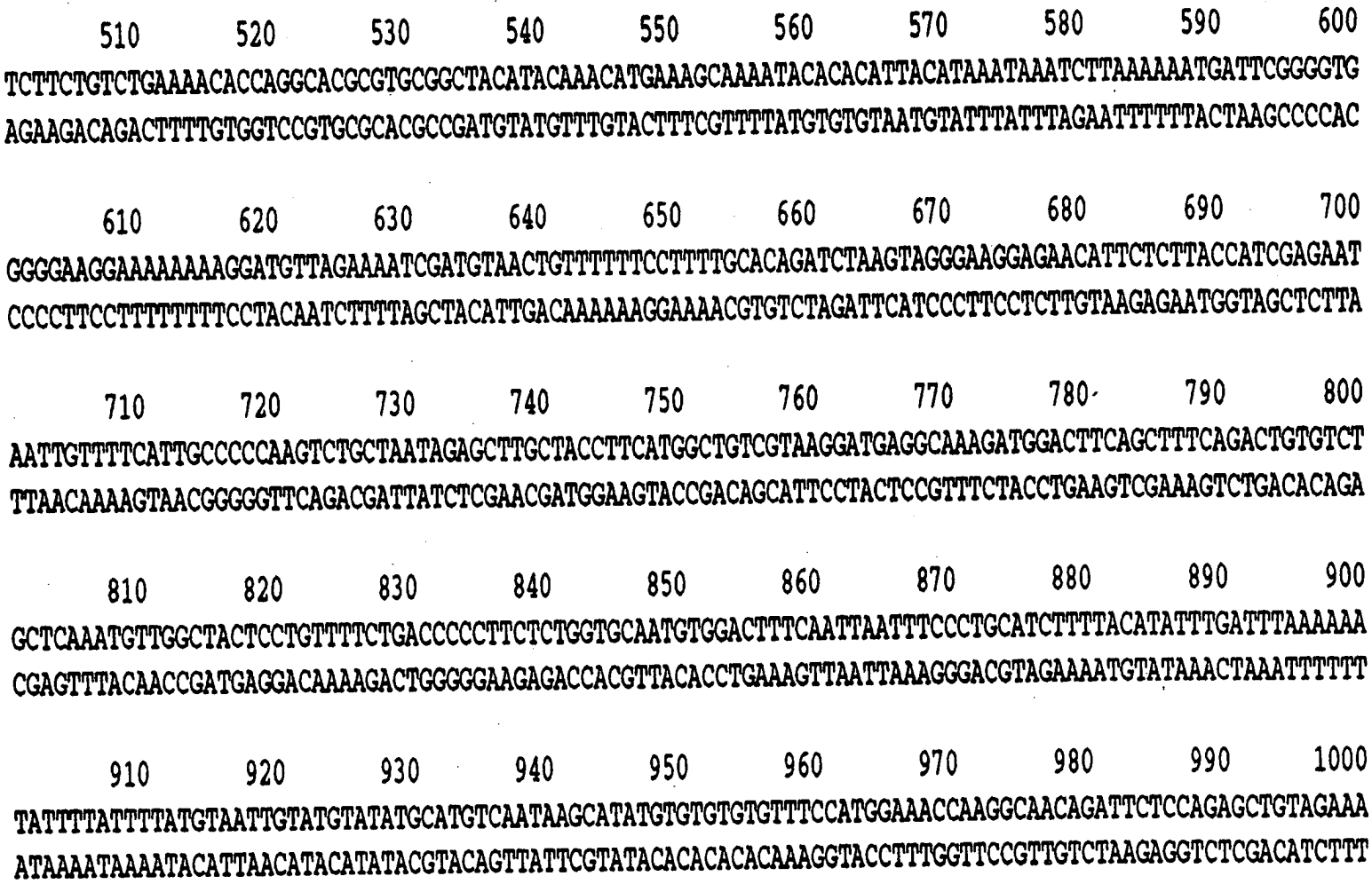

FIG. 5B

1010 1020 1030 1040 1050 1060 1070 1080 1090 1100
TGGGCTGTGAGACGCCCACTGTGGGTGCTCGGAACCAAACTCGGGTCCTGTGGAAAGACAGCGAGCACCCATAATGCAGAGGTATCTCTCAGACTCTACT
ACCCGACACTCTGCGGGTGACACCCACGAGCCTTGGTTTGAGCCCAGGACACCTTTCTGTCGCTCGTGGGTATTACGTCTCCATAGAGAGTCTGAGATGA

1110 1120 1130 1140 1150 1160 1170 1180 1190 1200
TTAAAATTTCAATTTATCTTTTTTTTTTTTAAAGTTCCAAGTAACTATAGGAAAGTACATGGGTATATAGATCCCCAGTACCAAGATTCTTCCTTTGCAG
AATTTTAAAGTTAAATAGAAAAAAAAAAAATTTCAAGGTTCATTGATATCCTTTCATGTACCCATATATCTAGGGGTCATGGTTCTAAGAAGGAAACGTC

1210 1220 1230 1240 1250 1260 1270 1280 1290 1300
GTAGCACAACTTGGTCTGCTTCACATAAAGAATGGAAAGTCATTAAAACACTCATCACACTGTAAAGTAGAATTGAACTCTGACAGAACAAGCGAAGTGA
CATCGTGTTGAACCAGACGAAGTGTATTTCTTACCTTTCAGTAATTTTGTGAGTAGTGTGACATTTCATCTTAACTTGAGACTGTCTTGTTCGCTTCACT

1310 1320 1330 1340 1350 1360 1370 1380 1390 1400
GTCTGACTTCCAGGTAACTGAGCCTTCTTTTCCTCCTAAAGACACAAGCCATACACAGAGTAAAATAAACTTGGGCATGGTGAGAAGGAAACAACGCAGG
CAGACTGAAGGTCCATTGACTCGGAAGAAAAGGAGGATTTCTGTGTTCGGTATGTGTCTCATTTTATTTGAACCCGTACCACTCTTCCTTTGTTGCGTCC

1410 1420 1430 1440 1450 1460 1470 1480 1490 1500
AGGGCTAGCCAAGTCTGAGAGTCGTGAGTGTGCTCGGTTTATAAACGGAGCCCACCTTGCCAGCGAGGTAGTCACATGCTCTGCTAAACAGAAACTTAAG
TCCCGATCGGTTCAGACTCTCAGCACTCACACGAGCCAAATATTTGCCTCGGGTGGAACGGTCGCTCCATCAGTGTACGAGACGATTTGTCTTTGAATTC

FIG. 5C

1510 1520 1530 1540 1550 1560 1570 1580 1590 1600
AAAACACTTACACGAAGCAAACATGGGGAAGTGCCATGCAAGCATGTGACTGACTGGTGGCAATGACCGAAACCACAGCAGCCACTAGAAAAGGAAGGGT
TTTTGTGAATGTGCTTCGTTTGTACCCCTTCACGGTACGTTCGTACACTGACTGACCACCGTTACTGGCTTTGGTGTCGTCGGTGATCTTTTCCTTCCCA

1610 1620 1630 1640 1650 1660 1670 1680 1690 1700
AGTGCGCCACACTGTAGTTGTGAAAATGAACTTATTCATTTATTTTGAAAAACGTGTAAGAAGCAAAGATGTCTTCTTTCCCACCTACCTTTGCGGCAGG
TCACGCGGTGTGACATCAACACTTTTACTTGAATAAGTAAATAAAACTTTTTGCACATTCTTCGTTTCTACAGAAGAAAGGGTGGATGGAAACGCCGTCC

1710 1720 1730 1740 1750 1760 1770 1780 1790 1800
CGAGCACTTCCTGGAATTTATAAAGTGCGATCTTTCTGGGGACTTCTCATAACATTTCCTACTGCTCATCTATGTCTGTGTCAAATAGAGAATGCTCTTG
GCTCGTGAAGGACCTTAAATATTTCACGCTAGAAAGACCCCTGAAGAGTATTGTAAAGGATGACGAGTAGATACAGACACAGTTTATCTCTTACGAGAAC

1810 1820 1830 1840 1850 1860 1870 1880 1890 1900
AACAAGTGTGTGTGTGTGTGTGTGCGCGCGCACGCGCACTCACTCCTGCTCTGTTGAGGTCCAGTTTTGATGGTCCCGCCAGAGGTATATTTGAGTAT
TTGTTCACACACACACACACACACGCGCGCGTGCGCGTGAGTGAGGACGAGACAACTCCAGGTCAAAACTACCAGGGCGGTCTCCATATAAACTCATA

1910 1920 1930 1940 1950 1960 1970 1980 1990 2000
CATTTCTCAAGAGCTTCAGCTGGGAGACACTGCCTCTTACTGGCCTGAAGGTCACTAGCTGATTCATCTCCGTTTGGGCTGGCGCGCCTTGGGGATCCTC
GTAAAGAGTTCTCGAAGTCGACCCTCTGTGACGGAGAATGACCGGACTTCCAGTGATCGACTAAGTAGAGGCAAACCCGACCGCGCGGAACCCCTAGGAG

FIG. 5D